Indiana Michigan Power
D.C. Cook Nuclear Plant

Groundwater Discharge Authorization Application
For the disposal of wastewater to the ground or groundwater

December 1, 2008

Renewal of Permit GW1810102
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Tab 1
GW permit application

STATE OF MICHIGAN

GROUNDWATER DISCHARGE AUTHORIZATION APPLICATION

for
the disposal of wastewater
to the ground or groundwater

Permits Section
Groundwater Permits Unit
Water Bureau
Michigan Department of Environmental Quality

Jennifer M. Granholm, Governor

Steven E. Chester, Director

PREFACE

This document contains a set of instructions and the application form necessary to apply for a groundwater discharge authorization. The instructions are organized to allow you to determine what type of authorization is required and how to obtain it.

The **instructions** first list several types of groundwater discharges that are prohibited, then several types of discharges that are automatically authorized, referred to as exemptions. If the discharge you are proposing is on either of these lists, you will not need to submit an application form. All other discharge authorization requests are required to file an application form. The instructions go on to list several other specific types of discharges that can be authorized short of a full permit. If the discharge is not included among those listed, then you must apply for a permit under Rule 2218.

The **application form** has two parts. The first is general information, which must be filled out by all applicants. The general information section is found on Pages 14-17 of the application. The second half of the application is divided into sections that are specific to the type of authorization being sought. Authorizations issued under Rules 2211, 2213 and 2216 are for very specific discharges, and are listed in the instructions. All remaining discharges are authorized under Rule 2218. Once you have determined what type of authorization you require and filled out the general information section, you should locate the portion of the application specific to your discharge and fill out the appropriate information. Page 18 of this document contains a detailed index listing the specific pages to be filled out for each specific discharge.

Please note: The Rules require that the applicant must provide all information necessary to make a permit decision. Applications that do not contain all necessary information will be returned as incomplete.

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A. GENERAL INFORMATION

1. WHO MUST APPLY FOR A PERMIT?

Section 3112(1) of Part 31, Water Resources Protection, of the Michigan Natural Resources and Environmental Protection Act of 1994, PA 451 as amended (Act 451) states that any person discharging any waste or waste effluent into the waters of this state must be in possession of a valid authorization to discharge from the Michigan Department of Environmental Quality (department).

A "person" is defined as an individual, partnership, corporation, association, governmental entity, or other legal entity.

2. PURPOSE

The purpose of the Part 22 Rules is to preserve the quality of groundwater for all of its protected uses, both current and potential future uses. Section 3109(1) of Act 451 prohibits the direct or indirect discharge into any waters of the state any substance that is or may become injurious to any protected uses of those waters. The department enforces this prohibition through the "Part 22" Administrative Rules, contained at M.A.C. R323.2201 through 2240. These rules are referenced in this document as Rule 2201 through 2240. The protected uses include public health, safety, and welfare; domestic, commercial, industrial, agricultural, recreational or other uses that may be made of such waters; the value or utility of riparian lands; and the use of the water by livestock, wild animals, birds, fish, aquatic life, or plants or the growth or propagation of those entities.

3. INFORMATION REQUIREMENTS FOR ALL DISCHARGERS

Rules 2206 and 2217 require that you must provide all information for the Department to make a decision regarding an application for a groundwater discharge authorization. If the information is not provided, the application will be returned as incomplete.

4. REQUIREMENTS FOR ALL DISCHARGERS

Rule 2204 establishes certain requirements for all dischargers. These are:

1. The discharge must not become injurious.
2. The discharge must not cause runoff to, ponding of, or flooding of adjacent property.
3. The discharge must not cause erosion.
4. The discharge must not cause nuisance conditions.
5. The discharge must be located not less than 100 feet inside the boundary of the property where the discharge occurs, unless authorized by Rule 2210, 2211, 2213 or a lesser distance is approved by the department.
6. The discharge must be isolated from water supply wells as indicated in Rule 2204(2)(d).
7. The discharge must not create a facility under Part 201 of Act 451.

There are certain operational requirements for each type of discharge that must be met after an authorization is issued. Those requirements are found in Appendix B, Pages 45-46 of the application form.

5. DISCHARGE PROHIBITIONS

Rule 2205 prohibits:

1. A discharge without an authorization under Rule 2204.
2. A discharge from a general-purpose floor drain unless authorized under Rule 2210(v), Rule 2215 or 2218.
3. A discharge of wastewater originating from a structure within 200 feet of an available public sanitary sewer system, except for a discharge of non-contact cooling water or a discharge from a groundwater remediation activity. For sanitary sewage, an available public sanitary sewer system is defined by section 12751(a) of Act 368 of the Public Acts of 1978, as amended, being 333.12751(a) of the Michigan Compiled Laws. For any other discharge, the department must make a determination of availability based on the ability of the public sanitary sewer system to treat the wastewater and the costs associated with providing the treatment.

6. WHAT SETBACK REQUIREMENTS MUST I MEET FOR MY DISCHARGE?

If the discharge is authorized under Rules 2216 or 2218, the point of discharge must be at least 100 feet within the property boundary, unless an alternate distance is required or allowed by the department. Also, there are requirements under Rule 2204(2)(d) for isolation distances from existing water supply wells. The following table lists those isolation requirements.

Well Type	Permit Authorization – 2218, 2216(3)	All Other Authorizations
I, IIa	2000 feet	200 feet
IIb, III	800 feet	75 feet
Domestic	300 feet	50 feet

7. WHAT IF I HAVE AN EXISTING PERMIT, AND THERE IS A CHANGE IN MY DISCHARGE?

If you anticipate there will be a change in either the quantity or quality of your discharge, you must notify the department prior to making the change. Within 30 calendar days of receiving the notice of modification, the department will notify you whether the modification is considered minor or significant. If the department determines the change is **minor**, you can make the changes you have identified, and the existing permit will be modified to reflect those changes. The department will send you a copy of the amended permit. If the changes are determined to be **significant**, then you must reapply for a permit by completing the application form and submitting it to the department for review and approval.

8. HOW DO I DEMONSTRATE EQUIVALENCY?

In many instances, the Part 22 rules allow you to provide equivalent information or alternative ways of meeting the conditions of the Rules. To demonstrate equivalency, you should provide both a narrative description and technical data to show that the alternative proposed meets the intent and achieve the same purpose as the Rule in question. For example, there are specific requirements for source water for Fruit & Vegetable washwater, Rule 2211(c), including municipal water, a water source meeting state or federal criteria, or water meeting standards of Rule 2222. An alternative water source not specified is surface water. If you wish to use surface water, you need to describe and demonstrate, possibly through water quality testing, how the surface water meets the intent of the Rule and provides equivalent environmental protection to the sources specified in the Rule.

B. IDENTIFYING THE TYPE OF AUTHORIZATION REQUIRED

This section lists all of the specific discharges identified in the Part 22 Rules. You should review the list and determine if your discharge is listed, and then follow the directions for how that particular discharge receives authorization.

1. EXEMPTIONS

Pursuant to Rule 2210 the activities listed below are automatically authorized and are exempt from obtaining a further authorization from the department, provided the requirements of Rule 2204 are met. You do not need to submit an application form.

(a) **Sanitary sewage** in either of the following circumstances if the sanitary sewage is not mixed with other waste:

(i) **The discharge is less than 1,000 gallons per day** and the disposal system is approved by the county, district, or city health department that has jurisdiction in accordance with either the requirements of the local sanitary code or the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994. Copies of the publication may be obtained without charge at the time of adoption of these Rules from the Michigan Department of Environmental Quality, Water Division, P.O. Box 30630, Lansing, Michigan 48909.

(ii) **The discharge is less than 6,000 gallons per day**, the disposal system is designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and the system is approved by the county, district, or city health department that has jurisdiction. Copies of the publication may be obtained without charge at the time of adoption of these Rules from the Michigan Department of Environmental Quality, Water Division, P.O. Box 30630, Lansing, Michigan 48909.

(b) **Controlled application of any of the following**:
  (i) An authorized substance to suppress dust. The following are authorized substances:
    (A) Water.
    (B) Calcium chloride.
    (C) Lignosulfate products.
    (D) Emulsified asphalt or resin stabilizers.
    (E) Vegetable by-products.
  (ii) A deicing substance.
  (iii) A substance for a natural resource or right-of-way maintenance program.
  (iv) A substance for a domestic activity.
  (v) A commercially manufactured pesticide or fertilizer for its intended use.

(c) **Stormwater**, other than from a secondary containment facility, when discharged through surface infiltration.

(d) **Stormwater** from a secondary containment facility that does not contain leaks or spills if the stormwater is inspected to ensure it meets the standards established in Rule 2222.

(e) **Water from a well used temporarily for dewatering at a construction site** if the water pumped does not create a site of environmental contamination under part 201.

(f) **A discharge from an animal feeding operation** that has less than 5,000 animal units if the discharge is determined by the director of the department of agriculture or his or her designated representative, to be in accordance with generally accepted agricultural and management practices, as defined in Act No. 93 of the Public Acts of 1981, as amended, being 286.471 to 286.474 of the Michigan Compiled Laws, and known as the Michigan right to farm act. For purposes of this Rule, 5,000 animal units is equal to 5,000 head of slaughter or feeder cattle, 3,500 mature dairy cattle, 12,500 swine weighing more than 25 kilograms or approximately 55 pounds, 50,000 sheep or lambs, 2,500 horses, 275,000 turkeys, 150,000 laying hens or broilers, or 25,000 ducks. An animal feeding operation is a lot or facility, or series of lots or facilities under one ownership which are adjacent to one another or which use a common area or system for the disposal of wastes, that meets both of the following conditions:
  (i) Animals, other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of 45 calendar days or more in any 12-month period.
  (ii) Crops, vegetation, forage growth, or postharvest residues are not sustained in the normal growing season over the portion of the lot or facility where animals are confined.

(g) Less than 50 gallons of wastewater per day from a **commercial animal care facility**.

(h) **Observation or monitoring well development or evacuation water**.

(i) **Potable water used for a domestic or domestic equivalent activities** other than sanitary sewage disposal.

(j) **Step test or pump test water** from any of the following:
  (i) A potable well or well used to develop a potable water supply.
  (ii) A well producing water that meets state or federal criteria for use as potable water.
  (iii) A test well where the quality of the test well discharge water is equal to or better than the background groundwater quality of the aquifer receiving the discharge.

(k) **Exfiltration from sanitary sewer collection systems**.

(l) **Wastewater from a heat pump** that has a heat exchange capacity of 300,000 Btu per hour or less if there is no chemical additive to the system.

(m) **Wastewater from a portable power washer** when used in either of the following circumstances:
  (i) By the occupant of a household for washing buildings, vehicles, or other surfaces associated with the domestic occupation of the household.
  (ii) By a commercial operator or in a commercial or industrial setting to remove nonpolluting substances from vehicles or surfaces when no additives are used and the washing process does not add significant pollutants to the water.

(n) **Swimming pool drainage and backwash water** discharged in accordance with sections 12521 to 12534 of Act No. 368 of the Public Acts of 1978, as amended, being 333.12521 to 333.12534 of the Michigan Compiled Laws.

(o) **Water treatment filter backwash water** if disposal is in accordance with plans and specifications approved by the department under Act No. 399 of the Public Acts of 1976, as amended, being 325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act.

(p) **Carpet cleaning wastewater** discharged by a noncommercial operator or by a commercial operator at a site receiving wastewater from not more than one location where carpet cleaning has occurred.

(q) **Less than 10,000 gallons per day of noncontact cooling water** that does not contain additives if the source of the cooling water is any of the following:
  (i) A municipal water supply.
  (ii) A water supply meeting state or federal criteria for use as potable water.
  (iii) Another source of water meeting the standards of Rule 2222.
  (iv) Another source approved by the department.

(r) **Land application of process sludge from a wastewater treatment facility** treating sanitary sewage when applied in accordance with applicable state and federal law.

(s) **Land application of process sludge from an industrial or commercial wastewater treatment facility** when authorized under R 299.4101 to R 299.4922, the administrative Rules implementing Part 115.

(t) **Placement of other solid waste on the ground when authorized under Part 115**. This provision does not apply to the disposal of wastewater generated through the operation of a facility licensed under Part 115.

(u) **Wastewater associated with an environmental response activity** described in any of the following paragraphs if the discharge is to the plume of groundwater contamination, including an area 100 feet hydraulically upgradient of the edge of the plume, and any additive used in the treatment process that is not part of the contamination plume meets the standards of Rule 2222:
  (i) A pump test discharge that does not change the physical dimensions of the plume in groundwater or, if the dimensions are changed, the changes are accounted for in the design of the final groundwater remediation plan.
  (ii) A remedial investigation, feasibility study, or remedial action discharge that is at or below the residential criteria authorized by section 20101a(1)(a) of the act, if applicable, or section 21304(a) of the act, if applicable.
  (iii) A discharge for a remedial investigation, feasibility study, or remedial action above the residential criteria authorized by section 20101a(1)(a) of the act, if applicable, or section 21304(a) of the act, if applicable, if a remediation investigation, feasibility study, or remediation plan has been approved by the department division that has compliance oversight. The remediation plan must indicate that the treatment system is designed and will be operated so that contaminated groundwater will eventually meet the appropriate land use-based cleanup criteria authorized by section 20120a(1)(a) to (d) of the act, if applicable, or section 21304(a) of the act, if applicable.

(v) **Precipitation and snow melt drainage off vehicles** discharged through a general-purpose floor drain in a parking structure in which maintenance activities do not occur.

(w) A discharge that has been specifically authorized by the department under a permit if the permit was not issued under this part.

(x) A discharge that occurs as the result of **placing waste materials on the ground in compliance with a designation of inertness issued under part 115** or **leaving contaminated materials in place in compliance with part 201 or 213.**

2. OTHER DISCHARGE SPECIFIC EXEMPTIONS.

Rule 2210 (y) allows discharges other than those listed above to be exempted from permitting on a case by case basis, if the department determines the discharge has an insignificant potential to be injurious based on volume and constituents.

To apply for an exemption according to Rule 2210(y), you should fill out pages 14-17 of the application, which contain general information about the facility. You should also provide the information required on Page 40 of the application. The department will notify you whether your application qualifies for an exemption under Rule 2210(y), or whether you must apply for a different authorization. You are not authorized to discharge until you receive approval from the department.

3. IF I DON'T QUALIFY FOR AN EXEMPTION, WHAT SORT OF AUTHORIZATION DO I NEED?

The following chart lists **specific** discharges for which you must submit an application prior to authorization. The chart also contains the Rule that describes the authorization and the **page numbers in the application** that relate to that specific authorization. Please note that there are specific qualifications that must be met for each of the authorizations listed which are contained in the Part 22 rules.

Discharge Type	Volume Limitation	Rule	Authorization	Page #
Commercial Animal Care	>50 gpd but <1,000 gpd	2211(h)	Notification	19, 22
Contact Cooling Water	< 5,000 gpd	2213(4)	Notification w/Certification	23, 25
Egg Washing	< 10,000 gpd	2213(3)	Notification w/Certification	23, 24
Fruit & Vegetable Washing	< 50,000 gpd	2211(d)	Notification	19, 20
Gravel, sand, limestone, dolomite mining		2215(4)	General Permit	27, 30
Hydrostatic Pipe Testing, Flushing	None	2211(g)	Notification	19, 21
Laundromat	< 500 gpd	2211(b)	Notification	19, 20
Laundromat	< 20,000 gpd	2216(4)	Permit, specific discharge	32, 35
Non-contact Cooling Water, w/additives	< 10,000 gpd	2213(2)	Notification w/Certification	23, 24
Non-contact Cooling Water, no additives	> 10,000 gpd	2211(c)	Notification	19, 20
Oil Field Brine		2215(5)	General Permit	27, 30
Portable Power Wash	1,000 gal/mo/acre	2211(e)	Notification	19, 21
Sanitary Sewage	6,000-10,000 gpd	2211(a)	Notification	19, 20
Sanitary Sewage, above ground treatment	I<10,000 gpd	2215(1)	General Permit	27, 28
Sanitary Sewage, Construct Wetland	< 20,000 gpd	2216(2)	Permit, specific discharge	32, 33
Sanitary Sewage, Specific Treatment	< 50,000 gpd	2216(3)	Permit, specific discharge	32, 34
Slaughterhouse	< 2,000 gpd	2215(3)	General Permit	27, 29
Groundwater Remediation:				
Pump Test Outside Plume	None	2211(f)	Notification	19, 21
Remediation, Outside Plume	None	2213(5)	Notification w/Certification	23, 26
Vehicle Wash, not open to public	< 2,000 gpd	2215(2)	General Permit	27, 28
Vehicle Wash, open to the public	< 3,000 gpd	2215(6)	General Permit	27, 31

gpd = gallons per day
gal/mo/acre = gallons per month per acre
< = less than
> = *greater than*

4. WHAT IF MY DISCHARGE TYPE DOES NOT APPEAR ON ANY OF THESE LISTS?

If your discharge does not appear on any of the previous lists, either as an exemption or a specific discharge permit, you must apply for a discharge authorization under Rule 2218. The section of the application that must be filled out specific to Rule 2218 begins on Page 36.

C. Rule 2218

1. IF I HAVE TO APPLY FOR AN AUTHORIZATION UNDER RULE 2218, WHAT TYPE OF INFORMATION MUST I PROVIDE?

Facilities that are authorized under Rule 2218 must provide the following types of information as part of the application:

a) An evaluation of the feasibility of alternatives to discharge to the groundwater in accordance with Rule 2219.
b) The basis of design as required by Rule 2218(2).
c) The hydrogeological report as required by Rule 2221.
d) The wastewater characterization as required by Rule 2220.
e) If a standard applicable to the discharge is to be determined under Rule 2222(5), the information necessary to determine that standard, including whether a substance is a hazardous substance under part 201.
f) The groundwater, or other media, sampling and analysis plan as specified by Rule 2223.
g) A description of the discharge methods and information that demonstrate that the land treatment requirements of Rule 2233 will be met.
h) If a lagoon is included in the treatment process, information that demonstrates that the requirements of Rule 2237 will be met.

Technical guidance documents have been drafted for items c,d,e,g and h above. They are identified in Part I, Section D.4 as additional reference materials. Sections C.2, C.3 and C.4 of these instructions provide guidance for the other information requirements of Rule 2218.

You are also responsible for meeting the groundwater quality standards contained in Rule 2222. You must meet the standards either in the discharge, or in the groundwater if treatment that takes place after discharging the wastewater to the ground. The standards themselves are complex, and it is strongly recommended that you schedule a pre-application meeting to discuss them with program staff. The process for requesting a meeting is found on Page 12, Section D.1 of these instructions. If you wish to investigate the standards on your own, the Part 22 Rules, including Rule 2222, are available on the Internet at the following location, **http://www.deq.state.mi.us/wmd/GWP/index.html**. You may also contact staff at the address or phone number found on Page 13 of these instructions for printed copies of the rules.

2. RULE 2219 - EVALUATION OF FEASIBILITY OF ALTERNATIVES TO DISCHARGE TO GROUNDWATER

Prior to applying for a Rule 2218 authorization, you must conduct an evaluation of the feasibility of alternatives to discharging to the groundwater and submit that as part of the application. The analysis should contain, at a minimum, the items listed below. Feasibility includes the practical ability to implement the alternative and a comparison of the cost of the alternative to its benefits.

At a minimum, alternatives to the discharge that must be considered are:

(a) minimizing the volume and toxicity of the wastewater.
(b) recycling wastewater.
(c) connecting to a municipal sanitary sewer system.
(d) discharging to surface water.

Alternatives for minimizing the volume and toxicity of wastewater include pollution prevention opportunities, including the following:

(a) Equipment or technology modifications.
(b) Process or procedure modifications.
(c) Reformulation or redesign of products.
(d) Substitution of raw materials.
(e) Improvements in housekeeping, maintenance, training, or inventory control.

The following treatment systems must be considered for substances determined to be in the discharge by the characterization required by Rule 2220:

(a) For a metal, the following:
    (i) Flocculation.
    (ii) Settling.
    (iii) Oxidation.
    (iv) Filtration.
    (v) Ion exchange
    (vi) Reverse osmosis.
    (vii) Electrolytic recovery.
(b) For a volatile substance, the following:
    (i) Carbon adsorption.
    (ii) Air stripping.
    (iii) Aeration.
(c) For a nonvolatile substance, the following:
    (i) Sorption.
    (ii) Settling.
    (iii) Filtration.

For a substance that degrades biologically, biological treatment in a lagoon, tank, or biological reactor or through controlled land treatment.

3. RULE 2218(2), BASIS OF DESIGN

At the time of application, you must submit a basis of design for the treatment system. The basis of design should include all of the following information:

(a) The volume of wastewater to be treated per unit of time.

(b) An analysis of the influent, or a description of the anticipated influent, including the substances to be treated to meet the requirements of Rule 2222 and the concentrations of the substances.

(c) A description of the existing or proposed treatment, or both, including, where applicable, the following:

(i) The treatment methods before discharge.

(ii) To the extent applicable, engineering plans depicting all of the following:

(A) A schematic flow diagram.
(B) Information on unit processes.
(C) Flow rates.
(D) Design hydraulic capacity.
(E) Pollutant loading.
(F) Detention times.
(G) Sizing of treatment units.
(H) Design calculations for major treatment units.
(I) A description of sludge management.

(iii) A discharge management plan that includes, where applicable, all of the following information:

(A) Maximum daily and annual discharge volumes.
(B) The total discharge area.
(C) Scheduled maintenance.
(D) Vegetative cover control and removal.
(E) Load and rest cycles.
(F) Application rates.
(G) Means for even distribution of waste or wastewater.
(H) Strategies for periods of adverse weather.
(I) Monitoring procedures.
(J) Other pertinent information.

(d) For a discharge of sanitary sewage, unless the Rules provide otherwise, the treatment system must be consistent with the standards in chapter 10 of the publication entitled "Engineering Reports and Facility Plans of the Recommended Standards for Wastewater Facilities" 1997 edition. The standards in chapter 10 are adopted by reference in the Rules. The standards may be purchased from Health Education Services, P.O. Box 7126, Albany, New York 12224, or from the Michigan Department of Environmental Quality, Water Division, P.O. Box 30630, Lansing, Michigan 48909, at a cost at the time of adoption of these Rules of $12.00, plus shipping and handling.

4. RULE 2223 - DISCHARGE MONITORING.

You are required to monitor your discharge in a manner, at a frequency, and for a substance(s) the department specifies are necessary to assess compliance with these Rules. The components of a monitoring program are:

(1) Monitoring of an indicator parameter may be used in monitoring if the technique accurately reflects the effect of the discharge. An indicator parameter must be representative of the environmental fate of a substance or substances in the discharge and must be one of the following:

(a) A substance in the discharge.
(b) A decomposition material of a substance.
(c) A sampling parameter that can be directly correlated to the concentration of another substance in the discharge.

(2) Groundwater monitoring must include the collection of water quality and water level data from a well or group of wells that are specifically designed to adequately assess the impact of the discharge on groundwater. The design of the groundwater monitoring system must be based on all of the following:

(a) The hydrogeologic report.
(b) Considerations of the local geology.
(c) Groundwater conditions specific to each site.
(d) The type of discharge.

(3) At the time of application for a permit under Rule 2218, an applicant must propose, for department approval, a groundwater sampling and analysis plan that establishes criteria for collecting representative samples of groundwater. The plan must contain all of the following information:
   (a) The number and location of wells to be included in the groundwater monitoring system.
   (b) For each well, the depth and screened interval for each monitor well. The screened interval must be referenced to United States geological survey data.
   (c) Well construction materials and installation techniques.
   (d) Sampling frequency.
   (e) A list of substances to be sampled.
   (f) Sampling procedure, including all of the following:
      (i) The method and volume of water removed from each well during sampling.
      (ii) Steps taken to prevent cross contamination between wells.
      (iii) Sample handling and preservation methods.
      (iv) Laboratory analysis method.
      (v) Laboratory method detection level.
      (vi) Quality assurance and quality control program.
   (g) A description of the techniques used to present and evaluate groundwater quality monitoring data.
   (h) A description of the method used to collect static water levels and present groundwater flow data. Static water level precision must be to 0.01 foot.

(4) A discharger must design, construct, and abandon a monitoring well as follows:
   (a) A monitoring well must be located at a depth where the screened interval will intercept the path of any discharge from the site in the groundwater.
   (b) If the thickness of the aquifer receiving the discharge is more than 20 feet, then at least one hydraulically downgradient monitor well location must contain a cluster well. The separation and length of the screens must be such that discrete groundwater potentiometric surface data can be collected to determine vertical gradients within the aquifer.
   (c) Monitor well construction and sampling equipment materials must not influence the sampling results for the substances sampled.
   (d) A monitor well must be designed to collect an adequate volume of water to allow analysis for the complete set of substances indicative of the discharge.
   (e) Annular space between the borehole and the well must be grouted from the ground surface to two feet above the well screen to prevent vertical leakage of the fluids between the casing and the drill hole. When drilling through confining layers, a discharger must install double-cased wells to prevent the hydraulic connection of fluids between formations above and below the confining layer.
   (f) A well must be protected against the introduction of contaminants by means of a locking device or by another method approved by the department.
   (g) A well must be vented so that accurate static water levels may be collected, or well caps must be removed a sufficient amount of time before measurement so that representative static water levels can be measured. Care must be taken to prevent the introduction of contaminants through vents.
   (h) The well casing must be adequately marked and protected against accidental damage.
   (i) A well must be labeled so that the discharger s name, address and the well number can be determined through the life of the permit.
   (j) If a monitoring well is to be permanently abandoned, a discharger must follow the plugging procedures in part 127 of Act No. 368 of the Public Acts of 1978, as amended, being 323.12701 to 323.12715 of the Michigan Compiled Laws.
   (k) A discharger must receive department approval before installing, replacing, redeveloping, or abandoning a monitoring well that is part of the discharge-monitoring program.

(5) If necessary to measure compliance with a standard established under Rule 2222, the department may specify the monitoring of media in addition to groundwater.

(6) A monitoring program under this Rule must be evaluated by the department on the basis of the threat the discharge poses to protected uses given all of the following factors:
   (a) The substances in the discharge.
   (b) The volume of the discharge.
   (c) The amount of information related to predicting the impacts of a discharge developed through the hydrogeological report prepared under Rule 2221.

D. APPLICATION PROCESS

At this point, you should be aware of the type of authorization that you will need from the department. This section describes the process of filing an application form with the department, formally requesting the authorization.

1. WHEN DO I HAVE TO APPLY?

For **new discharges or significant changes to an existing discharge,** you must submit the application at least 180 days in advance of the proposed date of discharge or significant change (Rule 2106). Permits are generally issued for five years, at which time an updated application must be submitted. For **reissuance** of an existing permit, you must submit the completed application form and the necessary attachments **180 days prior to the expiration date** of your current permit (Rule 2151(1)).

It is strongly recommended, especially prior to submitting an initial application or an application for a Rule 2218 authorization, that you request a pre-application meeting with staff of the Groundwater Section, Water Division. Technical staff will be available to discuss the proposed discharge, and can answer questions and provide information to you regarding such items as treatment alternatives, hydrogeologic studies, waste characterization, etc. It is recommended that you and/or your consultant be prepared to describe, at least in general terms, the basis of design for the proposed or existing wastewater treatment and disposal facilities.

To arrange a pre-application meeting, please contact:

Groundwater Permits Unit Chief
Permits Section
Water Bureau
PO Box 30273
Lansing, MI 48909
Telephone: 517-373-8148
Fax: 517-241-8133

2. HOW IS THE FORM ORGANIZED?

The application form is divided into two sections. Section I, pages 14-17, consists of general information that must be filled out by all applicants. (Occasionally, especially for general permits, not every item in Section I will be required, so please only fill out the applicable portions. For example, if you are applying for a General Permit under Rule 2215 for brine spreading, you would not fill out Item 7 which requests a CMR address). Section II contains information that must be filled out for specific discharges. An index appears after the general information section of the application, Page 18, which lists all of the specific discharges, Rules 2213 through 2216, and other discharges, covered under Rule 2218, and directs you to the appropriate pages for each particular discharge. Many of the discharges require supporting documentation of one kind or another. There are guidesheets available, listed on Page 13 as available reference materials, which provide guidance on how to gather and report the information in a manner that is acceptable to the Department. This does not preclude you from using alternative methods. It only means that if the guidance is followed very carefully, the methodology for collecting and reporting the information will be acceptable.

3. WHO MUST SIGN THE FORM?

The Part 21 Rules have very specific requirements for who must sign an application form. For a **corporation**, the form must be signed by a principal executive officer of at least the level of vice president, or his/her designated representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the permit application (appropriate documentation must be provided to demonstrate the position and responsibility of the designated representative). For a **partnership**, the form must be signed by a general partner, for a sole proprietorship, by the proprietor. For **municipal, state or other public facility**, the form must be singed by either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee. All signatures submitted to the department must be **original signatures**, or the application will be returned to you. The details of these requirements are found in Rule 2114.

4. WHAT ADDITIONAL REFERENCE MATERIALS ARE AVAILABLE?

The following are a list of the acts, rules, forms and other items that can be obtained from the Groundwater Program Section to assist an applicant in filling out an application form and providing information necessary to obtain a groundwater discharge permit or permit exemption:

1. Part 31 Water Resources Protection of Act 451
2. Part 41 Sewerage Systems of Act 451
3. Part 21 Wastewater Discharge Permits - Rules of Part 31 of Act 451
4. Part 22 Groundwater Quality - Rules of Part 31 of Act 451
5. Communities Participating in the Michigan Wellhead Protection Plan
6. Guidesheet I Guidance document for hydrogeologic studies
7. Guidesheet II Guidance document for irrigation management plans
8. Guidesheet III Guidance document for waste characterization
9. Guidesheet IV Guidance document for wastewater treatment and storage lagoons
10. Guidesheet V Guidance document for development of toxicology information
11. Guidesheet VI Guidance document for the Operation and Maintenance Manual

Requests for any of the above items should be made to:

Permits Section
Groundwater Permits Unit
Water Bureau
Michigan Department of Environmental Quality
P. O. Box 30273
Lansing, Michigan 48909
Telephone: 517-373-8148
FAX: 517-241-8133

There is a charge of 5 cents per page to cover handling costs.

This information is also available electronically on the Internet at the following address:
http://www.michigan.gov/deq/0,1607,7-135-3313_4117---,00.html

5. WHAT IF I HAVE QUESTIONS?

If you have questions about the form or process, please call or fax your questions to the following numbers:

Telephone: 517-373-8148
FAX : 517-241-8133

6. WHERE SHOULD I SEND THE COMPLETED FORM?

Please provide **two copies, including the signed original,** of the application form and all pertinent attachments, to the following address:

Permits Section
Groundwater Permits Unit
Water Bureau
Michigan Department of Environmental Quality
P. O. Box 30273
Lansing, Michigan 48909

7. DO THE RULES SPECIFY OPERATIONAL REQUIREMENTS?

Appendix B, Pages 45-46, provides an outline of the operational requirements that are mandated by the Part 22 Rules for each particular authorization. Please refer to the specific rule for detailed requirements.

8. PENALTIES

It is against the law to knowingly discharge wastewater into the groundwater without a permit or in violation of an existing permit. It is also against the law to intentionally make false statements in a permit application. A person who commits these offenses is guilty of a felony and substantial fines, and perhaps imprisonment, are the consequences. Section 3115(2) of Act 451 contains the details of the penalties associated with violating Part 31.

Groundwater Discharge Permit Application

REFERENCES IN THIS DOCUMENT TO "RULES" ARE TO ADMINISTRATIVE RULES IMPLEMENTING PART 31 OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED, BEING R 323.2101 TO 2192 AND R 323.2201 TO 2240.

GENERAL INFORMATION

Please type or print clearly

1. DISCHARGE FACILITY NAME

2. FACILITY OWNER NAME AND MAILING ADDRESS
   Name

   Street Address or P.O. Box

   City, State and Zip Code

   Telephone No.
   Fax No.
   Draft permits authorized pursuant to **Rule 2210(y)** and **2218** will be sent *electronically to owner. Owner Email:* _____

3. CONTACT PERSON
   Name and Title

   Street Address or P.O. Box

   City, State and Zip Code

   Telephone No. Fax No.

4. DISCHARGE LOCATION
   Street Address

   City State Zip Code

   County Township

   Township Range Section Number

   First Quarter Section Second Quarter Section Additional Quarter Sections

   Latitude Longitude

5. FACILITY TYPE
   Municipal (Sanitary Only) _____ Municipal (w/ Sanitary and Industrial Wastewater Inputs) _____
   Industrial _____ Commercial _____
   If Municipal, population served _____

6. CERTIFIED OPERATOR (NOT REQUIRED FOR 2211(c), (d), (e), (g), (h), or 2213 (2), (3), (4))
   A Certified Operator is required by Section 3110 (1) of Part 31 of Act 451.
   Name Certification Number

   Street Address

   City State Zip Code

   Telephone No.

7. FOR RULE **2215, 2216 AND 2218** AUTHORIZATIONS ONLY:

PLEASE INDICATE WHERE THE COMPLIANCE MONITORING REPORT FORMS SHOULD BE SENT

NAME

STREET ADDRESS

CITY STATE ZIP CODE

8. AUTHORIZATION REQUESTED:

____Rule 2210(y), Site Specific Exemption	____NEW USE	____REISSUANCE
____Rule 2211, Notification	____NEW USE	____REISSUANCE
____Rule 2213, Notification with Certification	____NEW USE	____REISSUANCE
____Rule 2215, General Permit, Certificate of Coverage	____NEW USE	____REISSUANCE
____Rule 2216, Specific Discharges	____NEW USE	____REISSUANCE
____Rule 2218, Discharge Permit	____NEW USE	____REISSUANCE

IF REQUESTING A REISSUANCE OR AN AUTHORIZATION DIFFERENT THAN THE CURRENT AUTHORIZATION, PLEASE INCLUDE THE PERMIT/EXEMPTION NUMBER OF THE CURRENT AUTHORIZATION:

If the current authorization is a permit, Rules 2216 or 2218, or was issued prior to August 26, 1999, the number is:	M_____
If the current authorization is a General Permit, Rule 2215, the number is:	MG_____
If the current authorization is a site specific exemption, Rule 2210(y), or was issued prior to August 26, 1999, the number is:	GWE-_____
If the current authorization is a notification, Rule 2211, the number is:	GWN-_____
If the current authorization is a notification/certification, Rule 2213, the number is:	GWC-_____

9. FACILITY STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE. _____
This information is available through the US Department of Labor, Office of Safety and Heath Administration, at the following web address: **www.osha.gov/oshstats/sicser.html**

10. SITE MAPS

Provide two black and white 8 1/2" X 11" maps drawn to scale that show the following:

SITE MAP 1

a) Discharge location in relation to property boundaries on a topographic map.
b) Township and county name.
c) North arrow orientation.

SITE MAP 2 - All sites must include item a, include items b-e as necessary.

a. Current and proposed treatment units and discharge areas and distance to property lines.
b. Monitoring wells on site and on adjacent properties.
c. Potable wells on site and on adjacent properties.
d. Surface waters, including wetlands, lakes, rivers, streams, and drains on the property.
e. Distance between multiple disposal sites.

ATTACH SITE MAP TO THIS APPLICATION FORM

11. WATER USAGE DIAGRAM

Please attach an 8 ½ x 11 diagram showing water usage at the facility, from supply to discharge. Include all flows such as sanitary, process water, etc. Please also indicate where in the system additives or other substances are added to the waste stream for which this authorization is being sought. The water balance should show daily average flow rates at influent, intake and discharge points and daily flow rates between treatment units. Please use actual measurements whenever possible.

12. OWNERSHIP OF TREATMENT SYSTEM AND DISPOSAL AREA

Are all parts of the treatment system and discharge areas (e.g. treatment plant, underground piping or irrigation fields) located on property owned by the applicant? Yes _____ No _____

IF NO, ATTACH THE NAME AND ADDRESS OF THE PROPERTY OWNER WHERE THE DISCHARGE WILL OCCUR, AND A COPY OF THE WRITTEN PERMISSION TO DISCHARGE ON PROPERTY NOT OWNED BY THE DISCHARGER.

13. PROXIMITY OF TREATMENT SYSTEM TO A KNOWN SOURCE OF GROUNDWATER CONTAMINATION

Are there any known groundwater contamination sites within 1/4 mile of your disposal site?

Yes _____ No _____ Unknown _____

IF YES, ATTACH TO THE APPLICATION FORM A DESCRIPTION OF THE LOCATION AND CONTAMINANTS BEING REMEDIATED AT THE SITE.

14. ISOLATION DISTANCE

The following are isolation distances required from the discharge to adjacent water supply wells. What is the distance from your discharge to the nearest water supply well?

WELL TYPE	PERMIT AUTHORIZATION: 2218, 2216(3)	ALL OTHER AUTHORIZATIONS
I, IIa	2000	200
IIb, III	800	75
Domestic	300	50

Distance to nearest **Type I, IIa** water supply well _____
Distance to nearest **Type IIb, III** water supply well _____
Distance to nearest **Domestic** water supply well _____

15. ADJACENT PROPERTY OWNERS

List the names and addresses of all property owners adjacent to the facility, treatment systems and discharge locations. Include properties across roadways.

ATTACH ANY ADDITIONAL NAMES AND ADDRESSES TO THE APPLICATION FORM.

NAME COMPLETE MAILING ADDRESS

16. WELLHEAD PROTECTION

Is your facility located in a designated wellhead protection area? Yes _____ No _____
If yes, please identify the community* _____

- Approved wellhead protection areas can be reviewed at the following web address: **http://www.michigan.gov/deq/0,1607,7-135-3313_3675_3695-59280--,00.html**

17. SIGNATORY REQUIREMENT

Pursuant to Rule 2114 of the Part 21 Rules, this application must have an original signature, and be signed by

the appropriate representative(s) as follows:

A. For a corporation, the form must be signed by a principal executive officer of at least the level of Vice-president, or his/her designated representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the permit application (appropriate documentation must be provided to demonstrate the position and responsibility of the designated representative).
B. For a partnership, the form must be signed by a general partner.
C. For a sole proprietorship, the form must be signed by the proprietor.
D. For municipal, state or other public facility, the form must be signed by either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.

All signatures submitted to the department must be original signatures, or the application will be returned as incomplete. The details of these requirements are found in Rule 2114.

The department reserves the right to request information in addition to that supplied with this application if necessary to verify statements made by the applicant or for the department to make a determination required by Part 31, Water Resources Protection, Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and/or the Part 22 Rules associated with Part 31.

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments. The information being submitted was collected and analyzed in accordance with the Part 22 Rules of Part 31 of Act 451, as amended. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print Name _____ Title _____

Representing _____

Signature _____ Date _____

THE FOLLOWING INDEX SHOWS WHERE EACH OF THE DISCHARGE SPECIFIC PAGES ARE LOCATED. PLEASE FILL OUT THE APPROPRIATE PAGES FOR THE SPECIFIC DISCHARGE PROPOSED AND ATTACH ALL SUPPORTING DOCUMENTATION.

PERMIT INDEX, AUTHORIZATION SPECIFIC INFORMATION

RULE 2211 AUTHORIZATION: WASTEWATER TYPE	DAILY MAXIMUM DISCHARGE, GALLONS	RULE SPECIFIC PAGES TO BE FILLED OUT
(a) Sanitary Sewage	6,000 – 10,000	19, 20
(b) Laundromat	< 500	19, 20
(c) Non-contact Cooling Water	>10, 000	19, 20
(d) Fruit & Vegetable Washwater	< 50,000	19, 20
(e) Portable Power Washer		19, 21
(f) Pump test Water		19, 21
(g) Hydrostatic Test Water		19, 21
(h) Commercial Animal Care	50 - 1,000	19, 22
RULE 2213 AUTHORIZATION: WASTEWATER TYPE		
(2) Non-contact cooling water, with additives	< 10,000	23, 24
(3) Egg washing wastewater	< 10,000	23, 24
(4) Cooling water	< 5,000	23, 25
(5) Groundwater remediation, outside plume		23, 26
RULE 2215 AUTHORIZATION WASTEWATER TYPE		
00-1 Sanitary Sewage, above ground	< 10,000	27, 28
00-2 Vehicle wash, not open to public	< 2,000	27, 28
01-3 Slaughterhouse	< 2,000	27, 29
00-4 Gravel, sand, limestone, dolomite mining		27, 30
00-5 Oil Field Brine		27, 30
01-6 Vehicle wash, open to the public	<3,000	27, 31
RULE 2216 AUTHORIZATION: ** WASTEWATER TYPE		
(2) Sanitary Sewage, Constructed Wetland	< 20,000	32, 33
(3) Sanitary Sewage, Specific 2216 Design	< 50,000	32, 34
(4) Laundromat wastewater	< 20,000	32, 35
RULE 2218 AUTHORIZATION, WHICH COVERS DISCHARGES NOT OTHERWISE LISTED		
New Permits		36, 37
Reissuance Permit, No Modifications		36, 38
Reissuance Permits, With Significant Modifications		36, 39
RULE 2210(y) AUTHORIZATION, SITE SPECIFIC EXEMPTION		40

> = GREATER THAN
< = LESS THAN

**RULE 2216 LISTS SPECIFIC DESIGN CRITERIA THAT MUST BE MET TO IN ORDER TO QUALIFY FOR THAT AUTHORIZATION. DISCHARGERS THAT MEET THE FLOW AND WASTEWATER CRITERIA, BUT DO NOT MEET THE DESIGN CRITERIA, MUST EITHER DEMONSTRATE EQUIVALENCY WITH THE RULE 2216 CRITERIA, OR APPLY FOR A PERMIT UNDER RULE 2218.

PERMIT BY RULE; NOTIFICATION

RULE 2211

A facility is authorized to discharge at the time a complete application is received by the department. The permittee will receive an acknowledgement letter from the department, indicating that the application was considered complete or is deficient, in which case the discharge would not be authorized.

1. RULE 2211 AUTHORIZATION REQUESTED:

	Wastewater Type	Daily Maximum Discharge, Gallons,
_____	(a) Sanitary Sewage	6,000 – 10,000
_____	(b) Laundromat	< 500
_____	(c) Non-contact Cooling Water, w/o additives	>10, 000
_____	(d) Fruit & Vegetable Washwater	<50,000
_____	(e) Portable Power Washer	
_____	(f) Pump Test Water	
_____	(g) Hydrostatic Test Water	
_____	(h) Commercial Animal Care	50 - 1,000

2. DISCHARGE VOLUME

ALL DISCHARGES:

Maximum daily discharge: _____ gallons per day

Cumulative annual discharge: _____ gallons per year

SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:

Discharge period _____ through _____

3. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
_____Spray Irrigation	A1f1	_____Tile Field	A1g1
_____Ridge and Furrow	A1f2	_____Injection well	A1g2
_____Flood/Sheet Irrigation	A1f3	_____Trench	A1g3
		_____ Drywell	A1g4
Seepage Beds:			
_____Slow/Medium Rate	A1f4		
_____Rapid Rate	A1f5		
_____Other - Please describe:			

a. **Sanitary Sewage, Rule 2211(a), 6,000-10,000 gallons per day**. Please check all system characteristics that apply to this specific discharge:

_____ Discharge is between 6,000 and 10,000 gallons per day.
_____ Sanitary sewage is not mixed with other waste.
_____ System is, or is to be, designed in accordance with "Michigan Criteria for Subsurface Sewage Disposal."
_____ The system has been approved by the county, district or city health department having jurisdiction.
_____ If the facility was constructed or expanded after August 26, 1999, the flow is monitored by a meter.

b. **Laundromat Wastewater, Rule 2211(b), less than 500 gallons per day**. Please check all system characteristics that apply to this specific discharge:

_____ Discharge is less than 500 gallons per day.
_____ The treatment system consists of at least two 1,000 gallon septic tanks, followed by disposal to a tile field.
_____ There is an operational lint filter on the wastewater discharge line.
_____ The tile field is designed and constructed in accordance with "Michigan Criteria for Subsurface Sewage Disposal."
_____ The sanitary sewage is routed to the same septic tank or tanks as the laundry wastewater.

c. **Non-contact cooling water, Rule 2211(c), more than 10,000 gallons per day, no additives**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is greater than 10,000 gallons per day.
_____ The non-contact cooling water contains no additives.

Please check which **one** of the following applies:
_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

d. **Fruit & Vegetable washwater, Rule 2211(d), less than 50,000 gallons per day**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is less than 50,000 gallons per day.
_____ There are no additives in the discharge.
_____ There are additives in the discharge which will not cause the groundwater to exceed the standards of Rule 2222.

Please check which **one** of the following applies:
_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 323.2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

Please list all additives in the discharge, and the concentration of the additive in the effluent. The concentration can be submitted as an analysis of the wastewater, or as a mass balance calculation. Wastewater characterization, including the use of mass balance calculations, should follow the guidance found in Guidesheet III.

ADDITIVE	ANNUAL USE RATE	CONCENTRATION (Indicate how determined, A for analysis, M for mass balance. Please remember to include units of measurement.)

e. **Portable Power Washer, Rule 2211(e)**. Please check all system characteristics that apply to this specific discharge:

_____ Only household soap or detergent readily available to consumers are used for cleaning.

_____ Additives other than soap and detergent are used only for their intended purpose and according to manufacturers directions.

_____ A log of all locations where discharges occur will be maintained after receiving authorization to discharge, including date, address, additive(s) used, and item(s) washed.

_____ Washing will be limited to removal of dirt and grime from the exterior of a vehicle, equipment, or a stationary source. It will not include the undercarriage of a vehicle, or the portion of a vehicle used to contained or transported substances as a product.

_____ Discharge will be limited to less than 1000 gallons of washwater per month per acre where discharge occurs.

Please check which **one** of the following applies:

_____ The source water is from a municipal supply.

_____ The water source meets state or federal criteria for use as potable water.

_____ The water source meets the standards of Rule 323.2222.

_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

f. Pump test water associated with environmental remediation, Rule 2211(f), discharge outside plume. Please check all system characteristics that apply for this specific discharge:

_____ Discharge meets the standards of Rule 2222.

TREATMENT CODES

Select and enter the appropriate treatment codes to describe treatment units, i.e., A1b, B2b (See APPENDIX A, Pages 41-44).

Treatment Unit A _____ _____ _____

Treatment Unit B _____ _____ _____

Treatment Unit C _____ _____ _____

Treatment Unit D _____ _____ _____

TREATMENT SYSTEM

Please describe how the current treatment system is/will meet the standards of Rule 2222 and the number of years it has been in operation.

g. Hydrostatic testing or flushing water, Rule 2211(g). Please check all system characteristics that apply to this specific discharge:

_____ There are no additives in the discharge.

_____ The testing is for new pipelines or tanks.

Please check which **one** of the following applies:

_____ The source water is from a municipal supply.

_____ The water source meets state or federal criteria for use as potable water.

_____ The water source meets the standards of Rule 2222.

_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

h. ***Commercial animal care, Rule 2211(h), between 50 and 1000 gallons per day***. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is between 50 and 1,000 gallons per day.
_____ There are no additives in the discharge.
_____ There are additives in the discharge which will not cause the groundwater to exceed the standards of Rule 2222.
_____ The distance to the nearest surface water body is greater than 200 feet.

Please check which **one** of the following applies:
_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 323.2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

Please list the name of all products used at the facility, and list all of the active ingredients for each of those products:

PRODUCT NAME	MANUFACTURER'S NAME	ACTIVE INGREDIENTS

PERMIT BY RULE, NOTIFICATION WITH DEPARTMENT CERTIFICATION

RULE 2213

A facility is authorized to discharge when it receives a certification from the department that verifies the discharge is authorized under this part. Within 60 calendar days of receiving a complete notification form required by this Rule, the department will issue a certification or indicate why the discharger is not authorized to discharge under this Rule.

1. RULE 2213 AUTHORIZATION REQUESTED:

	Wastewater Type	Daily Maximum Discharge, Gallons
_____	(2) Non-contact cooling water, with additives	< 10,000
_____	(3) Egg washing wastewater	< 10,000
_____	(4) Cooling water	< 5,000
_____	(5) Groundwater remediation, outside plume	

2. DISCHARGE VOLUME

ALL DISCHARGES:

Maximum daily discharge: _____ gallons per day

Cumulative annual discharge: _____ gallons per year

SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:

Discharge period _____ through _____

IRRIGATION SYSTEMS AND SEEPAGE BEDS UTILIZING SOILS FOR TREATMENT SHOULD INLCUDE THE FOLLOWING:

Effluent application rate:

Inches per hour _____ Inches per day _____ Inches per week _____ Inches per year _____

3. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
_____Spray Irrigation	A1f1	_____Tile Field	A1g1
_____Ridge and Furrow	A1f2	_____Injection well	A1g2
_____Flood/Sheet Irrigation	A1f3	_____Trench	A1g3
		_____ Drywell	A1g4
Seepage Beds:			
_____Slow/Medium Rate	A1f4		
_____Rapid Rate	A1f5		
_____Other - Please describe:			

2. **Non-contact cooling water with additives, Rule 2213(2), < 10,000 gallons per day**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is less than 10,000 gallons per day
_____ The additive(s) will not cause groundwater to exceed the standards of Rule 323.2222.

Please list the name and concentration of all additives in the discharge. The concentration can be submitted as an analysis of the wastewater, or as a mass balance calculation. Wastewater characterization, including the use of mass balance calculations, should follow the guidance found in Guidesheet III.

ADDITIVE	ANNUAL USE RATE	CONCENTRATION (Indicate how determined, A for analysis, M for mass balance. Please remember to include units of measurement)

3. **Egg Washing wastewater, Rule 2213(3), less than 10,000 gallons per day**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is less than 10,000 gallons per day.
_____ The additive(s) will not cause groundwater to exceed the standards of Rule 323.2222. For each additive, please fill out the additive information listed below.

Please check which **one** of the following applies:
_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 323.2222.
_____ The water source is an alternative to the above, approved by the Department.

Please list the name and concentration of all additives in the discharge. The concentration can be submitted as an analysis of the wastewater, or as a mass balance calculation. Wastewater characterization, including the use of mass balance calculations, should follow the guidance found in Guidesheet III.

ADDITIVE	ANNUAL USE RATE	CONCENTRATION (Indicate how determined, A for analysis, M for mass balance. Please remember to include units of measurement)

4. **Cooling water, Rule 2213(4), <5,000 gallons per day**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is less than 5,000 gallons per day.
_____ The discharge contains no additives.
_____ The discharge contains an additive, and it will not cause the groundwater to exceed the standards contained in Rule 2222.
_____ Wastewater has been characterized according to Rule 2220 and is listed below. Wastewater characterization, including the use of mass balance calculations, should follow the guidance found in Guidesheet III.
_____ If seeking a renewal of a previous authorization, the wastewater has been characterized annually and records are attached.
_____ If seeking a renewal of a previous authorization, the material cooled does not vary substantially from that used in seeking the original authorization.

Please list all additives in the discharge, and the concentration of the additive in the effluent. The concentration can be submitted as an analysis of the wastewater, or as a mass balance calculation. Wastewater characterization, including the use of mass balance calculations, should follow the guidance found in Guidesheet III.
NOTE: The discharger must characterize the wastewater annually, and submit the records of the annual characterization at the time of reissuance.

ADDITIVE	ANNUAL USE RATE	CONCENTRATION (Indicate how determined, A for analysis, M for mass balance. Please remember to include units of measurement)

5. **Groundwater remediation activities, clean up, discharge outside the plume, 2213(5).** Please check all system characteristics that apply to this specific discharge:

_____ The remedial action includes a groundwater extraction system designed and operated to prevent any portion of the plume above approved cleanup criteria from migrating beyond the zone of influence approved by the department division that has compliance oversight. The division having compliance oversight is:
  _____ Remediation and Redevelopment Division
  _____ Geological and Land Management Division
  _____ Waste and Hazardous Materials Division
  _____ Water Division
  _____ Other, please identify

_____ A *memorandum from the chief, or his/her designated representative, of the department division* responsible for compliance oversight of the remediation is included which certifies that the discharge meets the requirements of part 31, 111, 115, 201, 213, or 615, as applicable.

_____ A performance-monitoring plan was included in the remediation plan submitted to the department division responsible for compliance oversight. The plan included the following:
  _____ Groundwater monitoring wells have been installed within 150 feet of the discharge to verify that the standards of Rule 2222 are being met in groundwater.
  _____ Effluent and groundwater sampling to verify compliance with Rule 2213(5)(f).

_____ The frequency of sampling meets the requirements of Rule 2213(5)(e)(ii).

_____ Site map 1, required in Rule 2212(3)(m), should include the location of drinking water wells adequate to identify each water supply formation within ½ mile of the discharge. A copy of the well logs for each drinking water well identified on the map should be included.

_____ Site map 2, required in Rule 2212(3)(m) should include all of the following information:

_____ Groundwater flow direction.
_____ Extent of contamination plume.
_____ Calculated capture zone.
_____ Location of the groundwater extraction and interception system.
_____ Location of all observation and monitoring wells.

TREATMENT CODES
Select and enter the appropriate treatment codes to describe treatment units, i.e., A1b, B2b (see APPENDIX A, Pages 41-44)

Treatment Unit A _____ _____ _____
Treatment Unit B _____ _____ _____
Treatment Unit C _____ _____ _____
Treatment Unit D _____ _____ _____

Please provide a description of the treatment system indicating how it will produce an effluent that will meet the standards of Rule 2222.

GENERAL PERMIT
RULE 2215

A facility is not authorized to discharge until it receives a Certificate of Coverage from the department that verifies the discharge is authorized under this part.

1. RULE 2215 AUTHORIZATION REQUESTED:

	Wastewater Type	Daily Maximum Discharge, Gallons
_____	05-1 Above ground sewage disposal	< 10,000 (annual average)
_____	05-2 Vehicle wash, not open to the public	< 2,000
_____	05-3 Slaughterhouse	< 2,000 (annual average)
_____	05-4 Gravel, sand, limestone, or dolomite mining	
_____	05-5 Application of oil field brine	
_____	05-6 Vehicle wash, open to public	< 3,000
_____	05-7 Hydrodemolition	

2. DISCHARGE VOLUME

ALL DISCHARGES:

Maximum daily discharge: _____ gallons per day

Cumulative annual discharge: _____ gallons per year

SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:

Discharge period _____ through _____

IRRIGATION SYSTEMS AND SEEPAGE BEDS UTILIZING SOILS FOR TREATMENT SHOULD INCLUDE THE FOLLOWING:

Effluent application rate:

Inches per hour _____ Inches per day _____ Inches per week _____ Inches per year _____

3. CERTIFICATION OF DISCHARGE MINIMIZATION

Please attach the steps identified and considered to avoid or minimize the use and discharge of pollutants according to Rule 2215(3).

4. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
_____Spray Irrigation	A1f1	_____Tile Field	A1g1
_____Ridge and Furrow	A1f2	_____Injection well	A1g2
_____Flood/Sheet Irrigation	A1f3	_____Trench	A1g3
		_____ Drywell	A1g4
Seepage Beds:			
_____Slow/Medium Rate	A1f4		
_____Rapid Rate	A1f5		
_____Other - Please describe:			

05-1. **Above Ground Sewage Disposal Systems, less than 10,000 gallons per day (annual average) Rule 2215**. Please check all system characteristics that apply to this specific discharge and fill appropriate blanks:

_____ Discharge is less than 20,000 gallons per day, calculated as a daily maximum.
_____ Discharge is less than 10,000 gallons per day, calculated as an annual average.
_____ A log will be maintained on site by the discharger of the daily discharge volume of sanitary sewage. The log shall be retained for a minimum of three years, and made available upon request by the Department.

Property Ownership:

_____ Discharge occurs on property owned by the applicant
_____ Discharge occurs on property not owned by the applicant. Please attach written authorization to discharge on that property from the property owner.

Lagoon/Irrigation System:

_____ Anticipated date when plans and specifications for the treatment system will be submitted to the Department.
NOTE: Applicant cannot commence discharge until the Department notifies the discharger that the treatment system will meet the requirements of Rule 2204.
_____ The lagoon system is fenced and perimeter warning signs placed around the perimeter of the lagoon.
_____ Irrigation occurs between May 1 and October 15.
_____ If irrigating crops for human consumption, crops will be processed prior to consumption.
_____ Dairy animals will not be allowed to graze on fields until 30 days after the land application of wastewater.

Isolation Distance:

_____ Effluent will not be applied within 100 feet of the property line
_____ The Department has authorized a discharge less than 100 feet from the property line. The documentation for the lesser distance is included with this application, and is found in Attachment _____.

05-2. **Vehicle Wash Not Open to the Public, less than 2000 gallons per day, Rule 2215**. Please check all system characteristics that apply to this specific discharge:

_____ Discharge is less than 2000 gallons per day.
_____ The discharge consists of washwater with additives designed to remove non-polluting, inert substances from the exterior of vehicles, which excludes the washing of undercarriages or any portion of the vehicle that has come in contact with waste or products.
_____ Soaps, detergents and additives are used according to manufacturers directions, and do not include volatile organic compounds, such as degreasers.
_____ A log will be maintained on site by the discharger of the daily discharge volume of washwater with additives. The log shall be retained for a minimum of three years, and made available upon request by the Department.

Isolation Distance:

_____ Effluent will not be applied within 100 feet of the property line.
_____ The Department has authorized a discharge less than 100 feet from the property line. The documentation for the lesser distance is included with this application, and is found in Attachment _____.

Please check which **one** of the following applies:

_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

05-3. **Slaughterhouse Washwater with Additives, less than 2,000 gallons per day (annual average) Rule 2215**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge is less than 2,000 gallons per day calculated as an annual average.
_____ The washwater shall only contain additives resulting from cleaning operations.
_____ Soaps, detergents and additives are used according to manufacturers directions, and do not include volatile organic compounds, such as degreasers.
_____ The discharger has taken steps to minimize the discharge of blood, fat, paunch and other solids.
_____ The wastewater is transported to the discharge location in enclosed containers.
_____ A log will be maintained on site by the discharger of the daily discharge volume of washwater with additives. The log shall be retained for a minimum of three years, and made available upon request by the Department.

Please check which **one** of the following applies to the facility water source:

_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

Location:

_____ The facility is located in the Upper Peninsula.
_____ The facility is located in the Lower Peninsula.

Property Ownership:

_____ Discharge occurs on property owned by the applicant
_____ Discharge occurs on property not owned by the applicant. Please attach written authorization to discharge on that property from the property owner.

Lagoon/Irrigation System:

_____ Anticipated date when plans and specifications for the treatment system will be submitted to the Department.
NOTE: Applicant cannot commence discharge until the Department notifies the discharger that the treatment system will meet the requirements of Rule 2204.
_____ The lagoon system is fenced and perimeter warning signs placed around the perimeter of the lagoon.
_____ If irrigating crops for human consumption, crops will be processed prior to consumption.

Growing Season:

_____ Irrigation occurs between May 1 and November 15 in the Lower Peninsula, between May 1 and October 15 in the Upper Peninsula.
_____ The discharge is less than 4,000 gallons per acre per day.
_____ The irrigation area is vegetated to prevent erosion and provide adequate nutrient uptake.
_____ Effluent will not be applied within 100 feet of the property line.
_____ The Department has authorized a discharge less than 100 feet from the property line. The documentation for the lesser distance is included with this application, and is found in Attachment _____.

Winter Season:

_____ Irrigation occurs between November 16 and April 30 in the Lower Peninsula, between October 16 and April 30 in the Upper Peninsula.
_____ The discharge is less than 2,000 gallons per acre per week.
_____ The maximum total winter seasonal discharge is 10,000 gallons per acre.
_____ The irrigation area is vegetated to prevent erosion and provide adequate nutrient uptake.
_____ The irrigation area will be vegetated to prevent erosion and provide adequate nutrient uptake immediately after snow melt.
_____ The slope of the discharge area does not exceed two per cent.
_____ Effluent will not be applied within 400 feet of the property line, homes, buildings or surface water.
_____ The Department has authorized a discharge less than 400 feet from the property line. The documentation for the lesser distance is included with this application, and is found in Attachment _____.

05-4. **Gravel, sand, limestone, or dolomite mining, Rule 2215**. Please check all system characteristics that apply to this specific discharge:

_____ The discharge consists of washwater without additives, used for the purpose of washing and sorting uncontaminated gravel, sand, limestone or dolomite.
_____ A log will be maintained on site by the discharger of the daily discharge volume of washwater without additives. The log shall be retained for a minimum of three years, and made available upon request by the Department.

Property Ownership:

_____ Discharge occurs on property owned by the applicant
_____ Discharge occurs on property not owned by the applicant. Please attach written authorization to discharge on that property from the property owner.

Isolation Distance:

_____ Effluent will not be applied within 100 feet of the property line
_____ The Department has authorized a discharge less than 100 feet from the property line. The documentation for the lesser distance is included with this application, and is found in Attachment _____.

Please check which **one** of the following applies:

_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 323.2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

05-5. **Application of Oil Field Brine, Rule 2215**. Please check all system characteristics that apply to this specific discharge:

_____ The brine meets the requirements of R 324.705(3) of Part 615, Supervisor of Wells, 1994, PA 451, as amended.
_____ The brine is being used for ice or dust control or soil stabilization on land.
_____ Vehicular equipment used for the spreading of approved oil field brine is dedicated for that use or hauling fresh water.
_____ Brine will not be applied at a site of environmental contamination for chlorides as defined under Part 201 of Act 451.
_____ A brine application log will be maintained in the application vehicle for the previous two weeks applications of brine use that includes the information required in Section A.9 of the General Permit, and made available upon request by the Department or a peace officer.
_____ A brine application log will be maintained by the discharger for a minimum of three years of brine use which shall include the information required in Section A.9 of the General Permit, and made available upon request by the Department or a peace officer.

Dust Control/Soil Stabilization:

_____ The number of brine applications per year will be in accordance with Condition A.4.a. and Condition A.4.b. of the General Permit.
_____ Brine will be applied to roads and parking areas with a spreader bar delivering the brine over an eight to ten foot area.
_____ Brine will be applied at a maximum rate of 1500 gallons per lane mile of road or 1,250 gallons per acre of land.
_____ Brine will be applied in a manner to prevent runoff.

Ice Control:

_____ Brine will be applied only to paved roads or paved parking lots.
_____ Brine will be applied at a maximum rate of 500 gallons per lane mile or 400 gallons per acre of land.
_____ Brine will be applied only when the air temperature is above 20 degrees Fahrenheit.
_____ Brine will be applied with equipment designed to direct the discharge to the center of the pavement or high sides of curves.
_____ Brine application equipment will be equipped with measuring devices to ensure brine applications meet the requirements of the General Permit.

05-6. Vehicle Wash, open to the public, **Rule 2215**. Please check all system characteristics that apply to this specific discharge.

_____ The facility was in operation as of April 1, 2001.
_____ The discharge is less than 3,000 gallons per day.
_____ The soaps, detergents, and other cleaning chemicals do not contain volatile organic compounds, such as degreasers.
_____ There are no repair or maintenance activities taking place in the wash areas.
_____ Detergents, surfactants and other additives are only used in accordance with manufacturers specifications.
_____ Groundwater will be sampled twice per year and analyzed for the substances listed in Tables I, II and III of this General Permit.

Isolation Distance:

_____ Effluent will not be applied within 100 feet of the property line
_____ The Department has authorized a discharge less than 100 feet from the property line. The documentation for the lesser distance is included with this application, and is found in Attachment _____.

Monitor Wells:

_____ Monitor wells have been installed in accordance with Attachment II of this General Permit. A map showing the location of the wells in relation to the discharge, well logs, elevations (referenced to USGS datum) for top of casing, ground, and well screen interval, are found in Attachment _____.

Please check which **one** of the following applies:

_____ The source water is from a municipal supply.
_____ The water source meets state or federal criteria for use as potable water.
_____ The water source meets the standards of Rule 323.2222.
_____ The water source is an alternative to the above. Department approval is required, and supporting documentation is attached.

05-7. Hydrodemolition, **Rule 2215**. Please check all system characteristics that apply to this specific discharge.

_____ The discharge does not add additional contaminants to those present in the hydrodemolition wastewater.
_____ There is no discharge to surface water.
_____ The discharge is consistent with Michigan Department of Transportation contract documents for managing Hydrodemolition runoff water or other methods approved by the Department of Environmental Quality.
_____ The discharge occurs only on property where the discharger has a legal authorization for such a discharge on that property.
_____ The discharger maintains, on site, a log detailing the daily process wastewater discharge activities. The log shall be available for inspection and submitted to the Department of Environmental Quality upon request: Records will be maintained for a period of three years unless otherwise required by the Department of Environmental Quality.

PERMITS FOR SPECIFIC DISCHARGES

A DISCHARGE OF THE TYPE AND VOLUME SPECIFIED IN RULE 2216 THAT DOES NOT MEET THE SPECIFIC CRITERIA OF THIS RULE MUST APPLY FOR A PERMIT UNDER RULE 2218.

1. RULE 2216 AUTHORIZATION REQUESTED

	WASTEWATER TYPE	DAILY MAXIMUM DISCHARGE, GALLONS
_____	(2a) Sanitary Sewage, Constructed Wetland	less than 20,000
_____	(2b) Alternative Treatment System	
_____	(3) Sanitary Sewage, Rule 2216 Design	less than 50,000
_____	(4) Laundromat Wastewater	less than 20,000

2. DISCHARGE VOLUME

ALL DISCHARGES:

Maximum daily discharge: _____ gallons per day

Cumulative annual discharge: _____ gallons per year

SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:

Discharge period _____ through _____

IRRIGATION SYSTEMS AND SEEPAGE BEDS UTILIZING SOILS FOR TREATMENT SHOULD INLCUDE THE FOLLOWING:

Effluent application rate:

Inches per hour _____ Inches per day _____ Inches per week _____ Inches per year _____

3. PUBLIC NOTICE

Please attach a copy of the public notice, containing information required by Rule 2217(2)(b).

4. CERTIFICATION OF DISCHARGE MINIMIZATION

Please attach the steps identified and considered to avoid or minimize the use and discharge of pollutants according to Rule 2217(2)(c)

5. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
_____Spray Irrigation	A1f1	_____Tile Field	A1g1
_____Ridge and Furrow	A1f2	_____Injection well	A1g2
_____Flood/Sheet Irrigation	A1f3	_____Trench	A1g3
		_____ Drywell	A1g4
Seepage Beds:			
_____Slow/Medium Rate	A1f4		
_____Rapid Rate	A1f5		
_____Other - Please describe:			

6a. **Sanitary Sewage, Constructed Wetland, Rule 2216(2), less than 20,000 gallons per day**. Please check all system characteristics that apply for this specific discharge, either already in place or are part of the proposed design of the treatment system:

_____ The discharge is less than 20,000 gallons per day.
_____ A minimum of 2 septic tanks are installed in series preceding the constructed wetland.
_____ The septic tanks have a combined volume of at least 2 times the daily design flow.
_____ The outfall to the constructed wetland is equipped with a septic tank effluent filter.
_____ There is a system to enhance nitrification prior to discharge to the constructed wetland.
_____ The discharge has been treated to remove oil and grease, if applicable.
_____ The system has at least 2 wetland cells.
_____ Each wetland cell has a length to width ratio of between 2:1 and 4:1.
_____ The constructed wetland treatment cells have a composite bottom liner in compliance with Rule 2237. See Guidesheet IV for lagoon construction guidance
_____ The bottom of the lagoon cell has been constructed to be level.
_____ The wetland cell filter media consists of 1/2-inch to 1-inch washed gravel with 100% passing the 1.0-inch sieve and a maximum of 3% passing the 1/2-inch sieve.
_____ The filter media is between 18 inches and 30 inches in depth.
_____ The constructed wetland is insulated with at least 6 inches of mulch or other comparable substitute.
_____ The filter surface area hydraulic loading rate is not more than 1.2 gallons per square foot per day.
_____ The design retention time is not less than 7 calendar days.
_____ Indigenous or sterile wetland vegetation has been planted on a 1-foot grid across each wetland cell.
_____ The system has the capability to recirculate effluent back into the influent end of the system.
_____ The wetland cell discharges to a tile field designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994.
The tile field has been approved by:
_____ The county, district, or city health department that has jurisdiction.
_____ The department.

6b. **Sanitary Sewage, Rule 2216(2)(b), less than 20,000 gallons per day**, alternative treatment system.

_____ Alternative treatment system. If you are applying for an authorization for a alternative treatment system equivalent to a constructed wetland, please attach documentation that the proposed system produces an effluent of similar quality to that of the constructed wetland.

7. Sanitary sewage, specific design, Rule 2216(3), less than 50,000 gallons per day.

Please check the treatment systems being proposed under this Rule:
_____ Lagoon w/land treatment
_____ Sequencing batch reactor
_____ Activated sludge w/denitrification
_____ Oxidation ditch
_____ Other If other, please describe:

Please check all system characteristics that apply for this specific discharge:
_____ The discharge is less than 50,000 gallons per day.
_____ The sanitary sewage is not mixed with any other type of wastewater.
_____ The treatment system has sufficient hydraulic capacity to treat organic or inorganic loading so that the discharge receives physical, chemical, biological treatment or a combination of treatments to meet the standards of Rule 2222.
_____ The facility is under the supervision of a certified operator.
_____ Land application is in accordance with Rule 2233, requirements common to all land application.
_____ Land application is in accordance with the specific requirements of the following Rule:
  _____ Rule 2234, Slow rate land treatment
  _____ Rule 2235, Overland flow treatment
  _____ Rule 2236, Rapid Infiltration

7a. Lagoon with land treatment
_____ The lagoon liner meets the requirements of Rule 2237. See Guidesheet IV for lagoon construction guidance.
_____ The lagoon system has at least 2 cells.
_____ The lagoon storage volume is at a minimum 1/2 of the annual influent flow.
_____ The lagoon has security fencing and warning signs.
_____ Wastewater disposal is by means of land application to a suitable crop in accordance with Rule 2233. See Guidesheet II for guidance regarding land application of wastewater.
_____ The discharge occurs only from a cell(s) which have not received untreated wastewater for at least 30 calendar days prior to the discharge.

Lagoons without aeration
_____Cell 1 does not exceed a maximum depth of 6 feet.
_____Cell 2 does not exceed a maximum depth of 8 feet.
_____All additional cells do not exceed a maximum depth of 10 feet.

Lagoons with aeration
_____A minimum of 2 mg/l of dissolved oxygen is maintained in the primary cell.
_____The maximum depth of secondary cells does not exceed 10 feet.

7b. Sequencing batch reactor
_____ The discharge meets the requirements of Rule 2222 in the effluent.
_____ The facility has a contingency plan to deal with periods of upset, mechanical malfunctions, and routine maintenance while maintaining compliance with this part.
_____ The sequencing batch reactor system has at least 2 treatment tanks.

7c. All other treatment systems which do not involve land treatment
_____ The treatment system has a minimum storage volume of 1/2 the annual influent flow.
_____ The treatment system does not have a minimum storage volume of 1/2 the annual influent flow, the discharge meets the requirements of Rule 2222 in the effluent, and the facility has a contingency plan to deal with periods of upset, mechanical malfunctions, and routine maintenance while maintaining compliance with these rules.

8. Laundromat Wastewater, Rule 2216(4), less than 20,000 gallons per day. Please check all system characteristics that apply for this specific discharge:

_____ The discharge is less than 20,000 gallons per day.
_____ The laundromat does not have any dry cleaning operations.
_____ The lagoon liner meets the requirements of Rule 2237. See Guidesheet IV for lagoon construction guidance.
_____ The storage volume of the lagoon is at a minimum 1/2 of the annual influent flow.
_____ The lagoon system has at least 2 cells.
_____ The discharge shall occur only from cells that have not received untreated wastewater for at least 30 days.
_____ The lagoons have security fencing and warning signs.
_____ Discharge of treated wastewater is by means of low-rate application in accordance with Rule 2233. See Guidesheet II for guidance regarding land application of wastewater.
_____ The spray irrigation system is under pressure to enhance volatilization of organic constituents.

If aeration is not included as part of the lagoon treatment system, the following apply:

_____ Cell 1 does not exceed a maximum depth of 6 feet.
_____ Cell 2 does not exceed a maximum depth of 8 feet.
_____ Additional cells do not exceed a maximum depth of 10 feet.

If aeration is included as part of the lagoon treatment system, the following apply:

_____ The maximum depth of secondary cells does not exceed 10 feet.
_____ A minimum of 2 mg/l of dissolved oxygen will be maintained in the primary cell.

RULE 323.2218

DISCHARGE PERMITS

1. TYPE OF TREATED WASTEWATER FOR WHICH THE AUTHORIZATION IS REQUESTED. PLEASE CHECK ALL THAT APPLY

_____ Sanitary sewage
_____ Process wastewater
_____ Cooling water, greater than 5,000 gallons per day
_____ *Non-contact cooling without additives, greater than 10,000 gallons per day, source water not approved by* department.
_____ Non-contact cooling water with additives, greater than 10,000 gallons per day.
_____ Other, please describe:

2. DISCHARGE VOLUME

ALL DISCHARGES:

Maximum daily discharge: _____ gallons per day

Cumulative annual discharge: _____ gallons per year

SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:

Discharge period _____ *through* _____

IRRIGATION SYSTEMS AND SEEPAGE BEDS UTILIZING SOILS FOR TREATMENT SHOULD INLCUDE THE FOLLOWING:

Effluent application rate:

Inches per hour _____ Inches per day _____ Inches per week _____ Inches per year _____

3. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
_____Spray Irrigation	A1f1	_____Tile Field	A1g1
_____Ridge and Furrow	A1f2	_____Injection well	A1g2
_____Flood/Sheet Irrigation	A1f3	_____Trench	A1g3
		_____ Drywell	A1g4
Seepage Beds:			
_____Slow/Medium Rate	A1f4		
_____Rapid Rate	A1f5		
_____Other - Please describe:			

4. TREATMENT CODES

Select and enter the appropriate treatment codes to describe treatment units, i.e., A1b, B2b (see APPENDIX A, Pages 41-44)

Treatment Unit A _____ _____ _____
Treatment Unit B _____ _____ _____
Treatment Unit C _____ _____ _____
Treatment Unit D _____ _____ _____

Please provide a description of the treatment system indicating how it will produce an effluent that will meet the standards of Rule 2222.

4a. **New Permits – Rule 2218(3)(a)**

The following information must be included in the application for a new permit. Refer directly to Rule 2218 for specific information requirements. Please indicate where the necessary information is included in this application. Please indicate NA for those that do not apply to your discharge:

_____ An evaluation of the feasibility of alternatives to discharge to the groundwater in accordance with Rule 2219. See instructions, Page 9. This item is found _____.

_____ The basis of design as required by 323.2218(2). See instructions, Page 10. This item is found _____.

_____ The hydrogeological report as required by Rule 2221. See Guidesheet I. This item is found _____.

_____ The wastewater characterization as required by Rule 2220. See Guidesheet III. This item is found _____.

_____ If a standard applicable to the discharge is to be determined under Rule 2222(5), the information necessary to determine that standard, including whether a substance is a hazardous substance under Part 201. See Guidesheet V. This item is found _____.

_____ The groundwater, or other media, sampling and analysis plan specified by Rule 2223. See instructions, Page 10 This item is found _____.

_____ Information is attached that demonstrates the land treatment requirements of Rule 2233 will be met. See Guidesheet II. This item is found _____.

_____ If a lagoon is included in the treatment process, information that demonstrates that the requirements of Rule 2237 will be met. See Guidesheet IV. This item is found _____.

4b. **Reissuance of current permit, no modifications, Rule 2218(3)(c).** The following information must be included in the application for the reissuance of your current permit. Please check that all items have been included:

_____ The discharge consists of the same quantity, effluent characterization, and treatment process as previously permitted.

_____ A narrative description of the history of facility compliance with effluent and groundwater permit limits and sampling frequency is included. This item is found _____.

_____ An updated site map is included. This item is found _____.

_____ The most recent static water levels and groundwater elevations from all wells on site. This item is found _____.

_____ A current groundwater contour map is included, with a narrative evaluation of whether changes to the existing groundwater monitoring system are warranted and the rationale for any proposed change. This item is found _____.

_____ The most recent groundwater quality results are included from all wells on site. This item is found _____.

_____ The most recent effluent quality results are included. This item is found _____.

Please check that all of the following that apply are included:

_____ If permit limits were exceeded, the steps taken to bring the facility into compliance. This item is found _____.

_____ An evaluation of whether there are general trends in the effluent or groundwater sampling data indicating that the discharge is approaching permit limits. This item is found _____.

_____ The discharger has provided the department, within 30 calendar days of completion of construction of the treatment facilities, a certification by an engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, that a quality control and quality assurance program was utilized and that the facilities were built consistent with standard construction practices to comply with the permit and this part.

4c. **Reissuance of current permit, with significant modifications Rule 2218(3)(b).** The following information must be included in the application for the reissuance of your current permit. Please check that all items have been included:

_____ An evaluation of the feasibility of alternatives to discharge to the groundwater in accordance with Rule 2219 is included. See Page 9. This item is found _____.
_____ The basis of design required by 323.2218(2) is included. See Page 10. This item is found _____.
_____ The hydrogeological report required by Rule 2221 is included. See Guidesheet I. This item is found _____.
_____ The wastewater characterization required by Rule 2220 is included. See Guidesheet III. This item is found _____.
_____ If a standard applicable to the discharge is to be determined under Rule 2222(5), the information necessary to determine that standard, including whether a substance is a hazardous substance under Part 201. See Guidesheet V. This item is found _____.
_____ The monitoring plan as specified by Rule 2223 is included. See Page 10. This item is found _____.
_____ Information that demonstrates the land treatment requirements of Rule 2233 will be met is included. See Guidesheet II. This item is found _____.
_____ If a lagoon is included in the treatment process, information that demonstrates that the requirements of Rule 2237 will be met is included. See Guidesheet IV. This item is found _____.
_____ A narrative description of the history of facility compliance with effluent and groundwater permit limits and sampling frequency is included. This item is found _____.
_____ An updated site map is included. This item is found _____.
_____ The most recent static water levels and groundwater elevations from all wells on site are included. This item is found _____.
_____ A current groundwater contour map and a narrative evaluation of whether changes to the existing groundwater monitoring system are warranted and the rationale for any proposed change are included. This item is found _____.
_____ The most recent groundwater quality results from all wells on site are included. This item is found _____.
_____ The most recent effluent quality results are included. This item is found _____.

Please check that all of the following that apply are included:

_____ If permit limits were exceeded, a description of the steps taken to bring the facility into compliance. This item is found _____.
_____ An evaluation of whether there are general trends in the effluent or groundwater sampling data indicating that the discharge is approaching permit limits. This item is found _____.
_____ The discharger has provided the department, within 30 calendar days of completion of construction of the treatment facilities, a certification by an engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, that a quality control and quality assurance program was utilized and that the facilities were built consistent with standard construction practices to comply with the permit and this part.

SITE SPECIFIC EXEMPTION

RULE 2210(Y)

A facility is authorized to discharge after it receives approval from the department that states the discharge is authorized under this part.

1. Please attach a narrative description of the discharge, indicating how the volume and/or constituents in the discharge present an insignificant potential to be injurious to the groundwater.

2. DISCHARGE VOLUME
   ALL DISCHARGES:
   Maximum daily discharge: _____ gallons per day

   Cumulative annual discharge: _____ gallons per year

   SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:
   Discharge period _____ through _____

3. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
_____Spray Irrigation	A1f1	_____Tile Field	A1g1
_____Ridge and Furrow	A1f2	_____Injection well	A1g2
_____Flood/Sheet Irrigation	A1f3	_____Trench	A1g3
		_____ Drywell	A1g4
Seepage Beds:			
_____Slow/Medium Rate	A1f4		
_____Rapid Rate	A1f5		
_____Other - Please describe:			

To apply for an exemption according to Rule 2210(y), you should fill out pages 14-17 of this application, which contain general information about the facility. You should also provide the above information. The department will notify you whether your application qualifies for an exemption under Rule 2210(y), or whether you must apply for a different authorization. You are not authorized to discharge until you receive approval from the department.

APPENDIX A

TREATMENT METHOD CLASSIFICATION

The Treatment Method Classification is a three digit alphanumeric code to describe the treatment system and a guide for operator certification. The first entry is a letter designation to indicate **physical (A), chemical (B), or biological (C)** treatment. The second entry describes the appropriate **sub-classification**, and the last entry is a letter **correlating to the specific type of treatment**.

1. PHYSICAL

A-1a Special Classification - Minor discharges with no treatment and limited monitoring requirements. This classification applies only to discharges where no other classification applies. (Note: Proper application for certification is necessary, however no additional examination is required.)

Examples:
Hydrostatic testing of pipes and tanks
Discharge of storm water from secondary containment

A-1b Plain Clarification - Solids removal by gravity separation in a mechanical clarifier with no provision for the addition of chemical coagulant. (Note: Does not include basins intended to provide biological or chemical treatment.)

Examples:
Clarifiers with no provision for addition of coagulant
Settling Tanks with tube or plate settlers with no provision for addition of coagulant

A-1d Impoundment – A tank, basin, or reservoir intended to hold wastewater to allow for a controlled discharge; may or may not provide settling of solids. (Note: Does not include basins intended to provide biological or chemical treatment.)

Examples:
Discharge flow equalization
Mine tailing ponds
Gravel pits used to remove solids from wastewater

A-1f Land Surface Disposal – Disposal of wastewater by means of application to the surface of the land with percolation into the ground i.e.) No Underdrain

Examples:
Spray Irrigation
Ridge and Furrow
Rapid Infiltration Basin
Seepage Pond

A-1g Sub-surface Disposal – Tile field system used for discharge of wastewater with percolation into the ground. Does not include under-drain systems used to collect wastewater for further treatment and/or discharge.

Examples:
Septic tank – tile field system

A-1h Non-contact Cooling Water – Flow measurement, visual observation, sampling, and minor testing of non-contact cooling water discharges regulated by permit. Discharge of cooling water that has mixed with untreated wastewater is excluded. Proper application for certification is required; the written examination consists of a take-home questionnaire.

Examples:
Discharge from Heat Exchangers
Compressor Condensate
Cooling Tower Discharge

A-2b Filtration of Wastewater – Filtration of wastewater for the purpose of removing particulate materials. Specifically for Rapid Sand Filters, but may also include such processes as pressure filters, micro-screens, and bag filters.

A-2c Air Flotation – A wastewater treatment process for separation in which fine air bubbles are utilized to raise suspended materials to the surface where they are collected.

Note: Does not include sludge thickening processes

A-2d Air Stripping (Note Name Change from Gas Stripping) – Air stripping of volatile substances from wastewater or groundwater.

Note: Does not include off-gas treatment for odor control

A-2e Centrifuging – A wastewater treatment process in which a centrifuge is used to apply centripetal force to accelerate the separation of substances.

Examples:
Removal of solids from wastewater by centrifuging
Separation of oil from wastewater by centrifuging

Note: Does not include thickening of sludge by centrifuging

A-2g Deep Well Injection – Pressure injection of wastewater into a sub-surface formation.

B. CHEMICAL

B-1b Neutralization – A chemical treatment process whereby a wastewater is neutralized (pH adjustment) to achieve a pH level required for discharge.

Examples:
Addition of acid or base to meet limit in discharge permit
Does not include pH adjustment intended for such purposes as precipitation, nitrification, or to enhance biological treatment.

B-2a Chemical Clarification - Coagulation and/or Precipitation for solids removal from wastewater.

Chemical coagulation – The removal of suspended solids from wastewater through the addition of polymer, ferric chloride, alum, or other coagulants added to wastewater just prior to clarification.

Chemical precipitation – The removal of dissolved solids from wastewater by precipitation through the addition of a base, ferric chloride, alum or other chemical agent just prior to clarification.

Examples:
Precipitation of metals from wastewater
Precipitation of phosphorus from wastewater

B-2b Ion Exchange – A wastewater treatment process in which undesirable ionic materials in wastewater are exchanged for other ions on a resin material.

Note: Does not include softening of process water or boiler make-up water

B-2c Oil – Water Separation – Separation of oil from water with or without chemical addition.

Examples:
Grease Traps
Gravity Oil Water Separators
Chemical Emulsion Breaking
Oil Skimming

B-2d Ultraviolet Oxidation – A wastewater treatment process in which ultraviolet radiation is used to oxidize organic contaminants (Note: Does not include UV disinfection)

B-3b Carbon Adsorption – Removal of organic compounds from wastewater by adsorption on activated carbon.

Examples:
Includes systems in which wastewater passes through a carbon bed (liquid phase adsorption)
Does not include systems in which organics are removed from the wastewater by air stripping and then from the air by carbon adsorption (vapor phase adsorption).
Does not include carbon canisters used for odor control systems.

B-3c Reduction of Hexavalent Chromium – A wastewater treatment process in which hexavalent chromium is chemically reduced to trivalent chromium.

B-3d Oxidation of Cyanide – The removal of cyanide from wastewater through the process of alkaline chlorination.

C. BIOLOGICAL

C-1b Aerated Lagoons – A man-made pond or lagoon with mechanical or diffused aeration intended to provide aerobic biological treatment.

Note: Includes wastewater treatment systems with a combination of aerated and non-aerated cells

C-1c Stabilization Ponds – A man-made pond or lagoon intended to provide natural biological treatment without the addition of supplemental aeration.

C-2a Disinfection – The chemical or ultraviolet radiation disinfection process to destroy pathogenic organisms in wastewater just prior to discharge.

C-2b Trickling Filters – An attached growth wastewater treatment process in which wastewater is distributed over a media (usually rock or plastic) which supports the biological system and is designed to convert colloidal and dissolved organic compounds into settleable sludge.

C-2c Biological Sand Filters - Sand filtration systems intended to provide biological treatment of wastewater as well as physical filtration.

Examples:
Intermittent Sand Filters
Recirculating Sand Filters

C-2d Rotating Biological Contactors – An attached growth wastewater treatment process utilizing rotating plastic media designed to convert colloidal and dissolved organic compounds into settleable sludge.

C-2e Package Plant – (Note: Exam no longer offered. All new package plants will be classified C-3a or C-3b)

C-2f Constructed Wetlands - A man-made complex that simulates natural wetlands, intended to treat wastewater through microbial utilization and plant uptake of nutrients.

C-3a Activated Sludge – A suspended growth, biological treatment system designed to convert colloidal and dissolved organic compounds in wastewater into settleable sludge.

Examples:
Conventional Activated Sludge
Oxidation Ditch
Package Plants

C-3b Sequencing Batch Reactor – A modification of the activated sludge process in which treatment occurs in batch mode and the reactor also serves as the secondary clarifier. The treatment sequence is largely computer controlled.

APPENDIX B

OPERATIONAL REQUIREMENTS

In addition to information necessary to make a permit decision, the Part 22 Rules contain a series of operational requirements that must be followed after the discharge begins. The following is a brief overview of those requirements. The discharger should refer to the specific rule authorization for detailed requirements.

Rule 2211

(b) **Laundromat, less than 500 gallons per day**

(i) Septic tanks must be pumped when the sludge level reaches 25% of the tank volume.

(ii) Septic tanks must be equipped with an effluent filter.

(e) **Portable power washer**

(i) The discharge must not cause runoff of wastewater or deposition of waste materials onto adjacent properties.

Rule 2213

(3)Egg washing, less than 10,000 gallons per day

(a) The discharger must minimize the discharge of proteinaceous matter, such as egg yolks, to control odor and prevent nuisance conditions.

(4)Department approved groundwater remediation

(a) The discharger shall maintain all treatment works in good working order at all times.

Rule 2216

(2) Constructed wetland, less than 20,000 gallons per day

(a) Wetland vegetation shall be cultivated to maximize the rooted depth throughout the gravel filter media.

(3) Sanitary sewage, less than 50,000 gallons per day

(a) Sludge resulting from the wastewater treatment process must be disposed of in accordance with part 115 or land applied in accordance with applicable state and federal law.

(b) The discharger shall maintain all treatment or control facilities or systems in good working order and operate the facilities or systems as efficiently as possible.

(c) A discharger shall have an operation and maintenance manual for the wastewater treatment facility. The manual shall include all of the following information:

(i) Function, start-up, shutdown, and periodic maintenance procedures for each unit process and item of mechanical and electrical equipment.

(ii) The appropriate response or facility adjustment to minimize the impact of an emergency situation.

(iii) A monitoring program to monitor process efficiency.

(iv) Details of how inspections will be conducted and a schedule for the inspection of collection system and pump stations, where applicable.

(v) Periodic maintenance procedures for the collection system and pump stations, where applicable.

(vi) Procedures for the routine maintenance and inspection of lagoons and equipment used for irrigation, where applicable.

(d) Effluent may be discharged from May 1 through October 15, unless the department approves alternative dates.

(e) The discharger shall inspect the lagoon facilities weekly and maintain an inspection log unless otherwise authorized by the department.

(f) When drawing down a cell for transfer or discharge, the discharger shall meet all of the following requirements unless otherwise authorized by the department:

(i) Water discharged or transferred shall be removed from the surface 2 feet of the cell at a rate of less than 1 foot per day.

(ii) A discharger shall maintain a minimum of 2 feet of freeboard in all cells at all times.

(iii) A discharger shall maintain a minimum of 2 feet of water in all cells at all times.

(g) The discharger shall implement a facility maintenance program that incorporates all of the following management practices, unless otherwise authorized by the department:

(i) Vegetation shall be maintained at a height not more than 6 inches above the ground on lagoon dikes.

(ii) Not more than 10% of the water surface shall be covered by floating vegetation and not more than 10% of the water perimeter may have emergent rooted aquatic plants.

(iii) Dikes shall be inspected for evidence of erosion and animal burrowing. Damage due to erosion or animal burrowing shall be corrected immediately and steps taken to prevent occurrences in the future.

(iv) The occurrence of any of the following shall be minimized and immediate steps shall be taken to eliminate each occurrence:

(A) Scum.

(B) Floating sludge.

(C) Offensive odors.

(D) Insect infestations.

(E) Septic conditions.

(4) **Laundromats, less than 20,000 gallons per day**

(a) Effluent may be discharged from May 1 through October 15, unless alternative dates are approved by the department.

(b) The discharger shall inspect the lagoon facilities weekly and maintain an inspection log unless otherwise authorized by the department.

(c) When drawing down a cell for transfer or discharge, the discharger shall meet all of the following requirements unless otherwise authorized by the department:

(i) Water discharged or transferred shall be removed from the surface 2 feet of the cell at a rate of less than 1 foot per day.

(ii) A discharger shall maintain a minimum of 2 feet of freeboard in all cells at all times.

(iii) A discharger shall maintain a minimum of 2 feet of water in all cells at all times.

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(A) Scum.

(B) Floating sludge.

(C) Offensive odors.

(D) Insect infestations.

(E) Septic conditions.

Metals

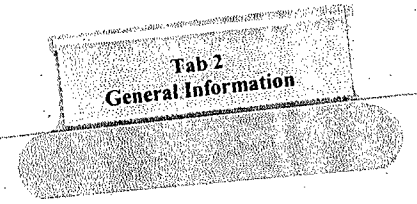
Groundwater and effluent parameters and detection limits

Parameter	Groundwater Detection Limits (ug/l)
Aluminum	50
Antimony	2
Arsenic	1
Barium	5
Beryllium	1
Boron	20
Cadmium	5
Calcium	1000
Chromium	2
Chromium VI	5
Cobalt	2
Copper	2
Iron	20
Lead	1
Lithium	8
Magnesium	1000
Manganese	5
Mercury	0.2
Molybdenum	25
Nickel	2
Potasium	100
Selenium	2
Silver	0.5
Sodium	1000
Titanium	10
Thallium	2
Vanadium	10
Zinc	4

Phenols

Groundwater and effluent parameters and detection limits

Parameter	Groundwater Detection limits (ug/l)
2-Chlorophenol	10
4-Chloro-3-methylphenol	10
M-Cresol & P-Cresol	20
O-Cresol	10
2,4-Dichlorophenol	10
2,4-Dimethylphenol	10
2,4-Dinitrophenol	50
2-Methyl-4,6-dinitrophenol	50
2-Nitrophenol	10
4-Nitrophenol	50
Pentrachlorophenol	50
Phenol	10
2,4,5-Trichlorophenol	10
2,4,6-Trichlorophenol	10


Tab 2
General Information

7. FOR RULE **2215, 2216 AND 2218** AUTHORIZATIONS ONLY:

PLEASE INDICATE WHERE THE COMPLIANCE MONITORING REPORT FORMS SHOULD BE SENT

NAME Donald C. Cook Plant- Attention Jon H. Harner, Mail Zone 5A

STREET ADDRESS One Cook Place

CITY Bridgman STATE MI ZIP CODE 49106

8. AUTHORIZATION REQUESTED:

____Rule 2210(y), Site Specific Exemption	____NEW USE	____REISSUANCE
____Rule 2211, Notification	____NEW USE	____REISSUANCE
____Rule 2213, Notification with Certification	____NEW USE	____REISSUANCE
____Rule 2215, General Permit, Certificate of Coverage	____NEW USE	____REISSUANCE
____Rule 2216, Specific Discharges	____NEW USE	____REISSUANCE
__X__Rule 2218, Discharge Permit	____NEW USE	__X__REISSUANCE

IF REQUESTING A REISSUANCE OR AN AUTHORIZATION DIFFERENT THAN THE CURRENT AUTHORIZATION, PLEASE INCLUDE THE PERMIT/EXEMPTION NUMBER OF THE CURRENT AUTHORIZATION:

If the current authorization is a permit, Rules 2216 or 2218, or was issued prior to August 26, 1999, the number is: M GW1810102

If the current authorization is a General Permit, Rule 2215, the number is: MG_____

If the current authorization is a site specific exemption, Rule 2210(y), or was issued prior to August 26, 1999, the number is: GWE-_____

If the current authorization is a notification, Rule 2211, the number is: GWN-_____

If the current authorization is a notification/certification, Rule 2213, the number is: GWC-_____

9. FACILITY STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE. 4911

This information is available through the US Department of Labor, Office of Safety and Heath Administration, at the following web address: **www.osha.gov/oshstats/sicser.html**

10. SITE MAPS

Provide two black and white 8 1/2" X 11" maps drawn to scale that show the following:

SITE MAP 1

a) Discharge location in relation to property boundaries on a topographic map.
b) Township and county name.
c) North arrow orientation.

SITE MAP 2 - All sites must include item a, include items b-e as necessary.

a. Current and proposed treatment units and discharge areas and distance to property lines.
b. Monitoring wells on site and on adjacent properties.
c. Potable wells on site and on adjacent properties.
d. Surface waters, including wetlands, lakes, rivers, streams, and drains on the property.
e. Distance between multiple disposal sites.

ATTACH SITE MAP TO THIS APPLICATION FORM

7. FOR RULE **2215, 2216 AND 2218** AUTHORIZATIONS ONLY:

PLEASE INDICATE WHERE THE COMPLIANCE MONITORING REPORT FORMS SHOULD BE SENT

NAME Donald C. Cook Plant- Attention Jon H. Harner, Mail Zone 5A

STREET ADDRESS One Cook Place

CITY Bridgman STATE MI ZIP CODE 49106

8. AUTHORIZATION REQUESTED:

____Rule 2210(y), Site Specific Exemption	____NEW USE	____REISSUANCE
____Rule 2211, Notification	____NEW USE	____REISSUANCE
____Rule 2213, Notification with Certification	____NEW USE	____REISSUANCE
____Rule 2215, General Permit, Certificate of Coverage	____NEW USE	____REISSUANCE
____Rule 2216, Specific Discharges	____NEW USE	____REISSUANCE
____Rule 2218, Discharge Permit	____NEW USE	__X__REISSUANCE

IF REQUESTING A REISSUANCE OR AN AUTHORIZATION DIFFERENT THAN THE CURRENT AUTHORIZATION, PLEASE INCLUDE THE PERMIT/EXEMPTION NUMBER OF THE CURRENT AUTHORIZATION:

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If the current authorization is a General Permit, Rule 2215, the number is:	MG_____
If the current authorization is a site specific exemption, Rule 2210(y), or was issued prior to August 26, 1999, the number is:	GWE-_____
If the current authorization is a notification, Rule 2211, the number is:	GWN-_____
If the current authorization is a notification/certification, Rule 2213, the number is:	GWC-_____

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This information is available through the US Department of Labor, Office of Safety and Heath Administration, at the following web address: **www.osha.gov/oshstats/sicser.html**

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a. Current and proposed treatment units and discharge areas and distance to property lines.
b. Monitoring wells on site and on adjacent properties.
c. Potable wells on site and on adjacent properties.
d. Surface waters, including wetlands, lakes, rivers, streams, and drains on the property.
e. Distance between multiple disposal sites.

ATTACH SITE MAP TO THIS APPLICATION FORM

11. WATER USAGE DIAGRAM

Please attach an 8 ½ x 11 diagram showing water usage at the facility, from supply to discharge. Include all flows such as sanitary, process water, etc. Please also indicate where in the system additives or other substances are added to the waste stream for which this authorization is being sought. The water balance should show daily average flow rates at influent, intake and discharge points and daily flow rates between treatment units. Please use actual measurements whenever possible.

12. OWNERSHIP OF TREATMENT SYSTEM AND DISPOSAL AREA

Are all parts of the treatment system and discharge areas (e.g. treatment plant, underground piping or irrigation fields) located on property owned by the applicant? Yes X No _____

IF NO, ATTACH THE NAME AND ADDRESS OF THE PROPERTY OWNER WHERE THE DISCHARGE WILL OCCUR, AND A COPY OF THE WRITTEN PERMISSION TO DISCHARGE ON PROPERTY NOT OWNED BY THE DISCHARGER.

13. PROXIMITY OF TREATMENT SYSTEM TO A KNOWN SOURCE OF GROUNDWATER CONTAMINATION

Are there any known groundwater contamination sites within 1/4 mile of your disposal site?

Yes X No _____ Unknown _____

IF YES, ATTACH TO THE APPLICATION FORM A DESCRIPTION OF THE LOCATION AND CONTAMINANTS BEING REMEDIATED AT THE SITE. On Site Map # 2

14. ISOLATION DISTANCE

The following are isolation distances required from the discharge to adjacent water supply wells. What is the distance from your discharge to the nearest water supply well?

WELL TYPE	PERMIT AUTHORIZATION: 2218, 2216(3)	ALL OTHER AUTHORIZATIONS
I, IIa	2000	200
IIb, III	800	75
Domestic	300	50

Distance to nearest **Type I, IIa** water supply well 6 Miles- Outdoor Kitchen
Distance to nearest **Type IIb, III** water supply well 3 Miles- Grand Mere State Park
Distance to nearest **Domestic** water supply well* Greater than 1 Mile

* No Domestic wells in Lake Twp per Lake Twp Water Superintendent

15. ADJACENT PROPERTY OWNERS

List the names and addresses of all property owners adjacent to the facility, treatment systems and discharge locations. Include properties across roadways.

ATTACH ANY ADDITIONAL NAMES AND ADDRESSES TO THE APPLICATION FORM.

NAME COMPLETE MAILING ADDRESS

16. WELLHEAD PROTECTION

Is your facility located in a designated wellhead protection area? Yes _____ No X
If yes, please identify the community* _____

- Approved wellhead protection areas can be reviewed at the following web address: **http://www.michigan.gov/deq/0,1607,7-135-3313_3675_3695-59280--,00.html**

17. SIGNATORY REQUIREMENT

Pursuant to Rule 2114 of the Part 21 Rules, this application must have an original signature, and be signed by

the appropriate representative(s) as follows:

A. For a corporation, the form must be signed by a principal executive officer of at least the level of Vice-president, or his/her designated representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the permit application (appropriate documentation must be provided to demonstrate the position and responsibility of the designated representative).
B. For a partnership, the form must be signed by a general partner.
C. For a sole proprietorship, the form must be signed by the proprietor.
D. For municipal, state or other public facility, the form must be signed by either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.

All signatures submitted to the department must be original signatures, or the application will be returned as incomplete. The details of these requirements are found in Rule 2114.

The department reserves the right to request information in addition to that supplied with this application if necessary to verify statements made by the applicant or for the department to make a determination required by Part 31, Water Resources Protection, Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and/or the Part 22 Rules associated with Part 31.

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments. The information being submitted was collected and analyzed in accordance with the Part 22 Rules of Part 31 of Act 451, as amended. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print Name Jon H. Harner Title Environmental Manager

Representing Indiana Michigan Power - A fully owned Subsidiary of American Electric Power

Signature _____ Date 11/18/08

RULE 323.2218

DISCHARGE PERMITS

1. TYPE OF TREATED WASTEWATER FOR WHICH THE AUTHORIZATION IS REQUESTED. PLEASE CHECK ALL THAT APPLY

- [X] Sanitary sewage
- [X] Process wastewater
- [ ] Cooling water, greater than 5,000 gallons per day
- [ ] Non-contact cooling without additives, greater than 10,000 gallons per day, source water not approved by department.
- [ ] Non-contact cooling water with additives, greater than 10,000 gallons per day.
- [ ] Other, please describe:

2. DISCHARGE VOLUME

ALL DISCHARGES:

Maximum daily discharge: 00D: 2,400,000 / 00E: 60,000 gallons per day

Cumulative annual discharge: 00D: 876,000,000 / 00E: 21,900,000 gallons per year

SEASONAL DISCHARGES SHOULD INCLUDE THE FOLLOWING:

Discharge period N/A through N/A

IRRIGATION SYSTEMS AND SEEPAGE BEDS UTILIZING SOILS FOR TREATMENT SHOULD INLCUDE THE FOLLOWING:

Effluent application rate:

Inches per hour N/A Inches per day N/A Inches per week N/A Inches per year N/A

3. DISCHARGE METHOD

Please check the discharge method used:

LAND SURFACE DISPOSAL	DISPOSAL CODE	SUBSURFACE DISPOSAL	DISPOSAL CODE
[ ] Spray Irrigation	A1f1	[ ] Tile Field	A1g1
[ ] Ridge and Furrow	A1f2	[ ] Injection well	A1g2
[ ] Flood/Sheet Irrigation	A1f3	[ ] Trench	A1g3
		[ ] Drywell	A1g4

Seepage Beds:

- [ ] Slow/Medium Rate A1f4
- [X] Rapid Rate A1f5
- [X] Other - Please describe: Seepage Basins, Rapid Infiltration Basins.

4. TREATMENT CODES

Select and enter the appropriate treatment codes to describe treatment units, i.e., A1b, B2b (see APPENDIX A, Pages 41-44)

Treatment Unit A	A-1h	B-1b	A-1f	(Outfall 00D - Turbine Room Sump)
Treatment Unit B	A-2b	C-3a	C-3b, A-1f	(Outfall 00E - Sewage Treatment Plant)
Treatment Unit C				
Treatment Unit D				

Please provide a description of the treatment system indicating how it will produce an effluent that will meet the standards of Rule 2222.

4b. **Reissuance of current permit, no modifications, Rule 2218(3)(c).** The following information must be included in the application for the reissuance of your current permit. Please check that all items have been included:

X The discharge consists of the same quantity, effluent characterization, and treatment process as previously permitted.

X A narrative description of the history of facility compliance with effluent and groundwater permit limits and sampling frequency is included. This item is found Tab 9.

X An updated site map is included. This item is found Tab 3 & 4.

X The most recent static water levels and groundwater elevations from all wells on site. This item is found Tab 10.

X A current groundwater contour map is included, with a narrative evaluation of whether changes to the existing groundwater monitoring system are warranted and the rationale for any proposed change. This item is found Tab 11.

X The most recent groundwater quality results are included from all wells on site. This item is found Tab 12.

X The most recent effluent quality results are included. This item is found Tab 12.

Please check that all of the following that apply are included:

N/A If permit limits were exceeded, the steps taken to bring the facility into compliance. This item is found _____.

X An evaluation of whether there are general trends in the effluent or groundwater sampling data indicating that the discharge is approaching permit limits. This item is found Tab 9.

N/A The discharger has provided the department, within 30 calendar days of completion of construction of the treatment facilities, a certification by an engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, that a quality control and quality assurance program was utilized and that the facilities were built consistent with standard construction practices to comply with the permit and this part.

INDIANA MICHIGAN POWER

Indiana Michigan
Power Company
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

Mr. Greg Danneffel
Michigan Department of Environmental Quality
7953 Adobe Road
Kalamazoo, MI 49009-5026

February 27, 2007

Subject: Signatory Authority

Dear Mr. Danneffel:

This letter identifies that Jon H. Harner, Environmental Manager, has signatory authority for NPDES and groundwater related issues. Signatory authority is based on job function as permitted by regulatory requirements. The objective in establishing signatory authority by position was to identify a broad class of job families so that as process improvements are made, managers who are most familiar with the work will have the appropriate signatory authority to meet environmental regulatory requirements for permits, licenses and reports.

> For Nuclear Generation Facilities: 1)the Manager of Site Operations (Plant Manager); 2)the AEP Nuclear Generation Group Manager(Site Vice President); and 3) the AEP Manager of Environmental Services (Environmental Manager).

The persons holding all of the above named positions have the necessary responsibility and authority to ensure that accurate permit and license application and/or report are prepared and appropriate corporate resources are dedicated to achieve compliance with the permits for their respective functional areas.

Sincerely,

Joseph N. Jensen
Site Vice President

c: NDM (2007-191)

Carol L Ray/BC1/AEPIN
10/24/2008 01:05 PM

To NGG_DHS_MANAGERIAL
cc NGG_NDM_CORRESPONDENCE, NGG_DEPTSEC_MANAGERIAL, NGG_ENV_ALL
bcc
Subject Delegation of Authority- Environmental Manager

This email contains a Correspondence Control Document doclink located at the bottom of the page. Please click the document link to open the Correspondence Control Database to view the associated document. Thank You.

Control Number:
2008-902

Subject:
Delegation of Authority- Environmental Manager

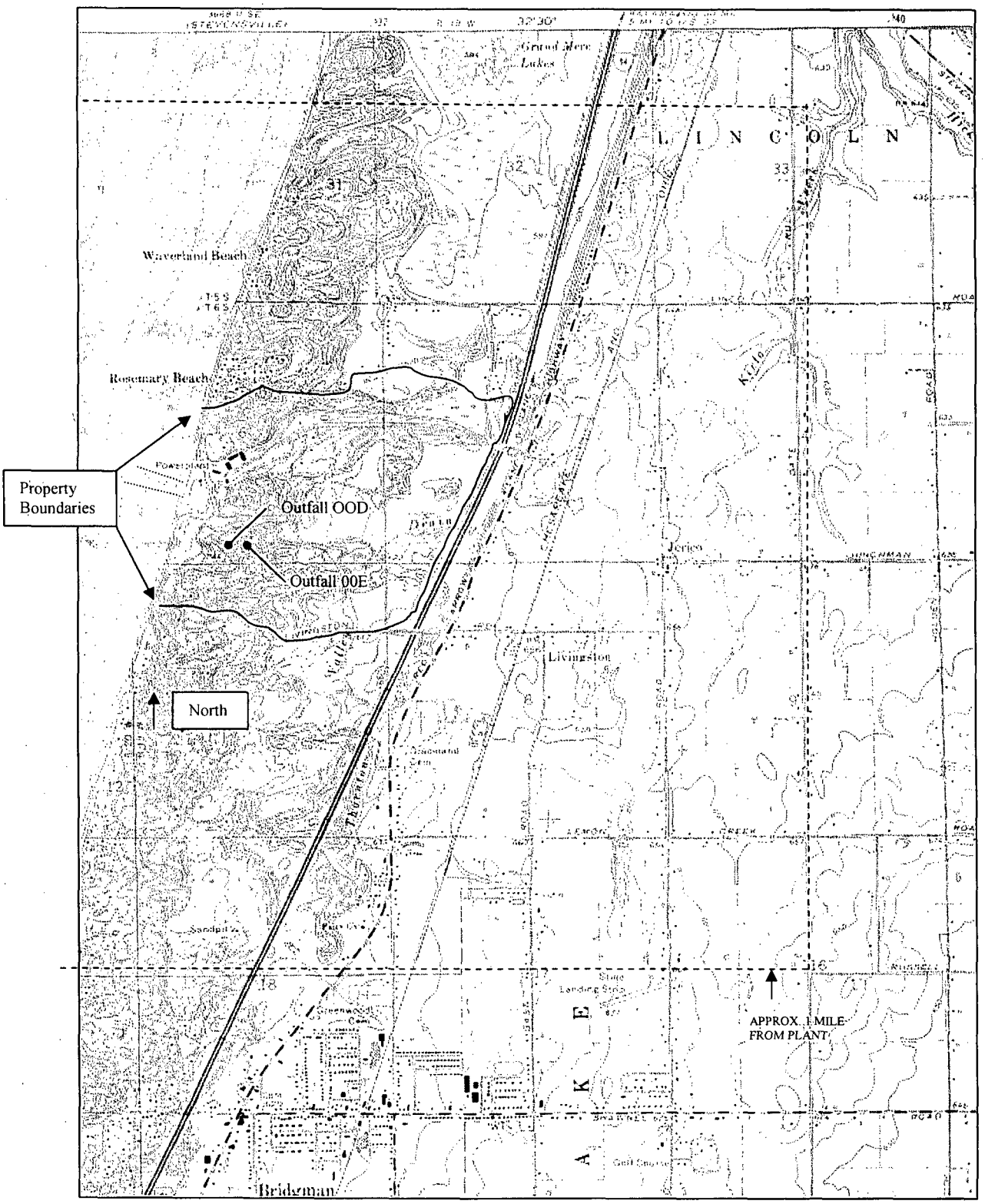
Reference:

Click here to open --->

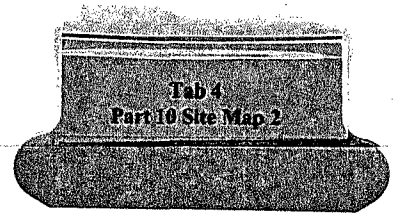
Beginning Monday, Oct 27, 2008, Jon Harner, Environmental Manager, will be the Manager Sponsor for the Turbine Clean Up during the forced outage. While Jon is in this position, Douglas Foster will have full signature authority and handle all matters pertaining to the Environmental Manager (HR issues will not be delegated). You can reach Doug at extension 1599 or by contacting Carol Ray at extension 1626.

Tab 3
Part 10 Site Map 1

Donald C. Cook Nuclear Plant GW1810102
Part 10, Site Map 1

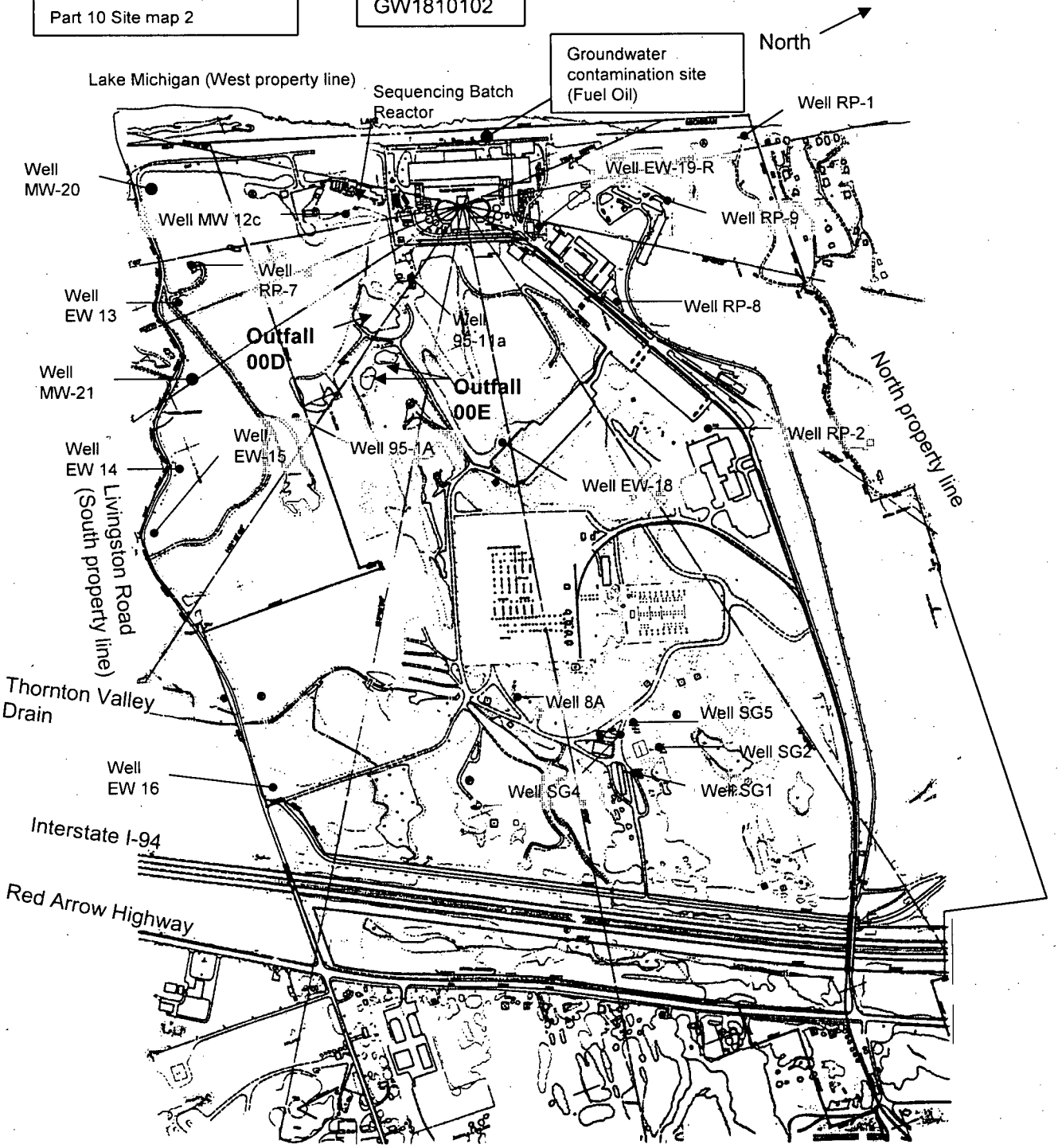


Donald C. Cook Nuclear Plant.
Bridgman Michigan
Lake Township
Berrien County
1" = 0.5 mile

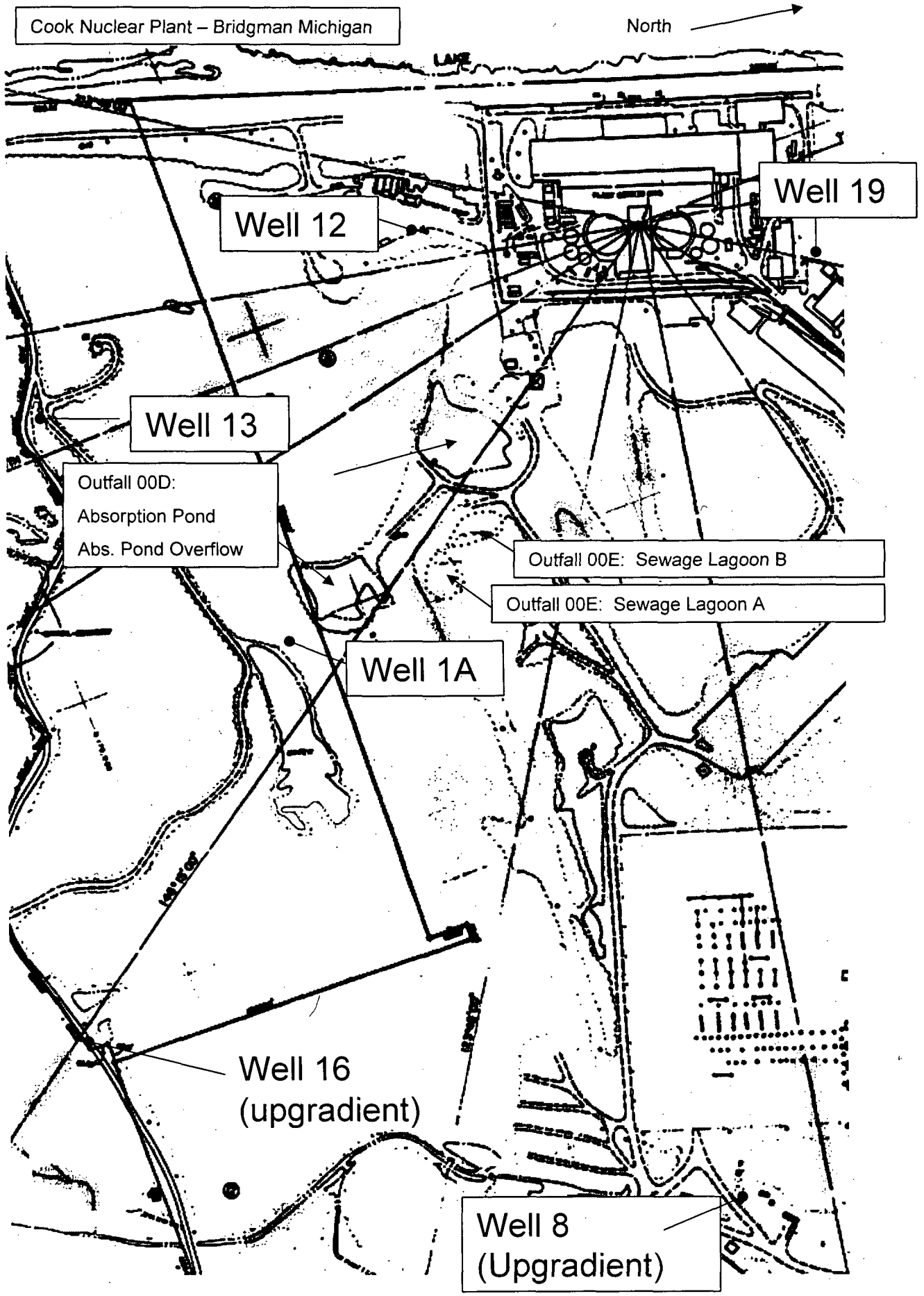

Tab 4
Part 10 Site Map 2

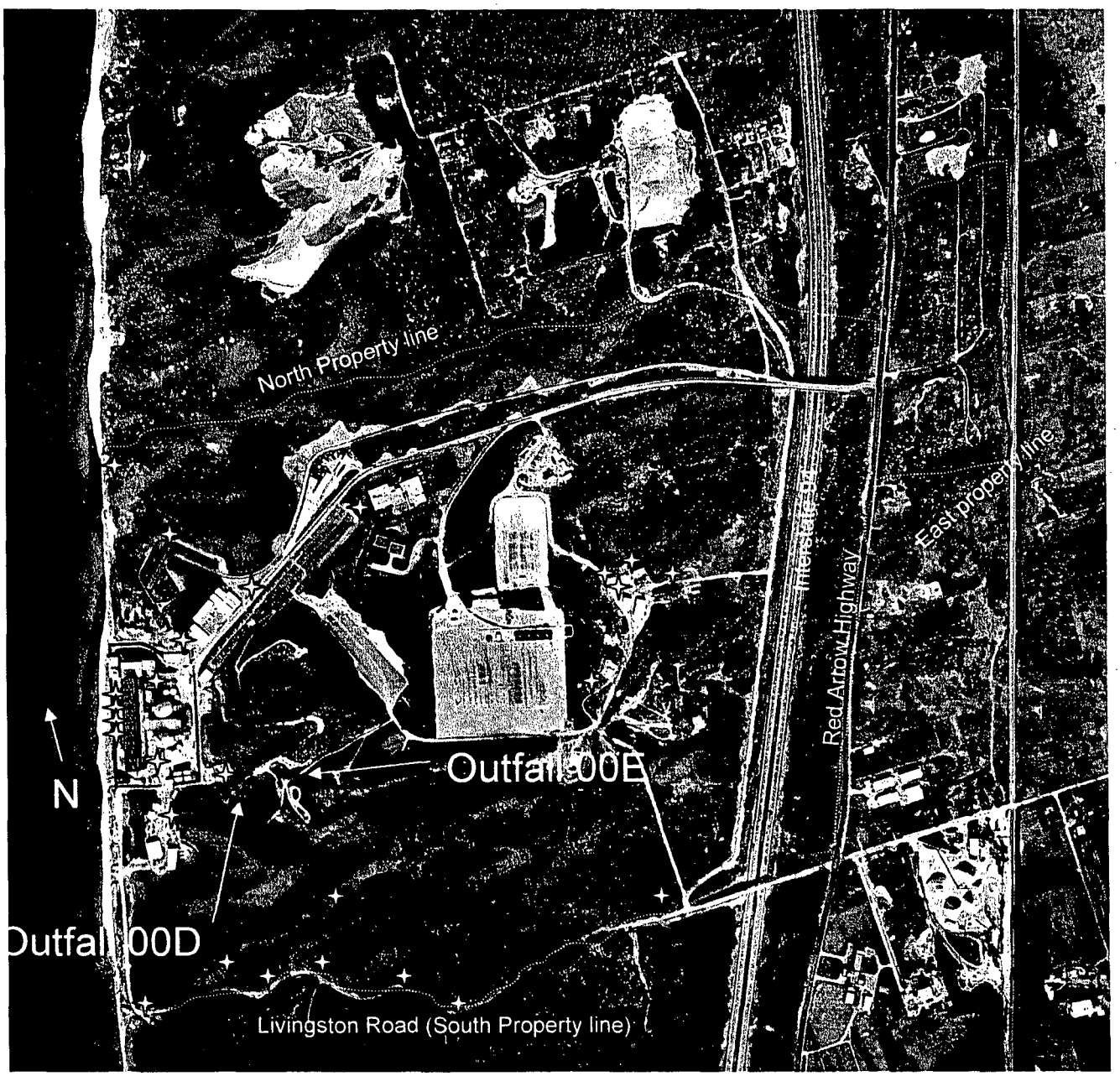
Donald C. Cook Nuclear Plant
Part 10 Site map 2

GW1810102



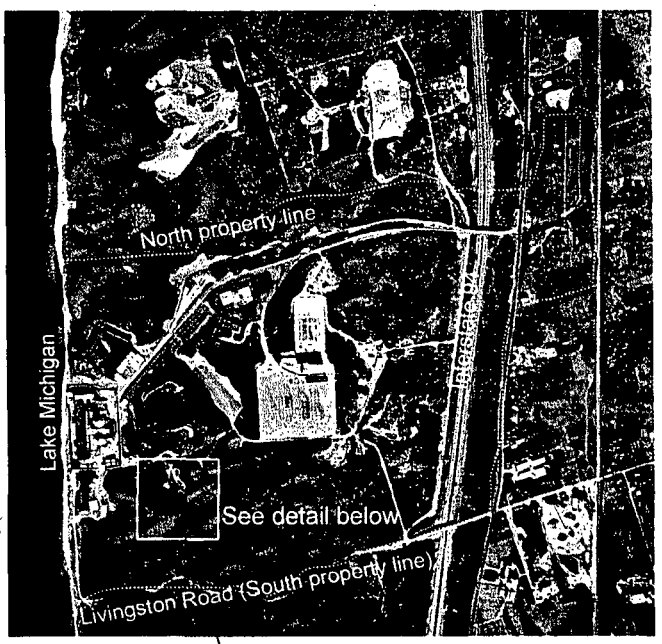
Distance from discharge 00D	Distance from discharge 00E	Cook Nuclear Plant
South property line: 1200'	South property line: 1300'	Berrien County
Lake Michigan: 1000'	Lake Michigan: 1500'	Lake Township
East property line: 3600'	East property line: 3400'	Scale: 1" = 1000'
North property line: 2600'	North property line: 2600'	

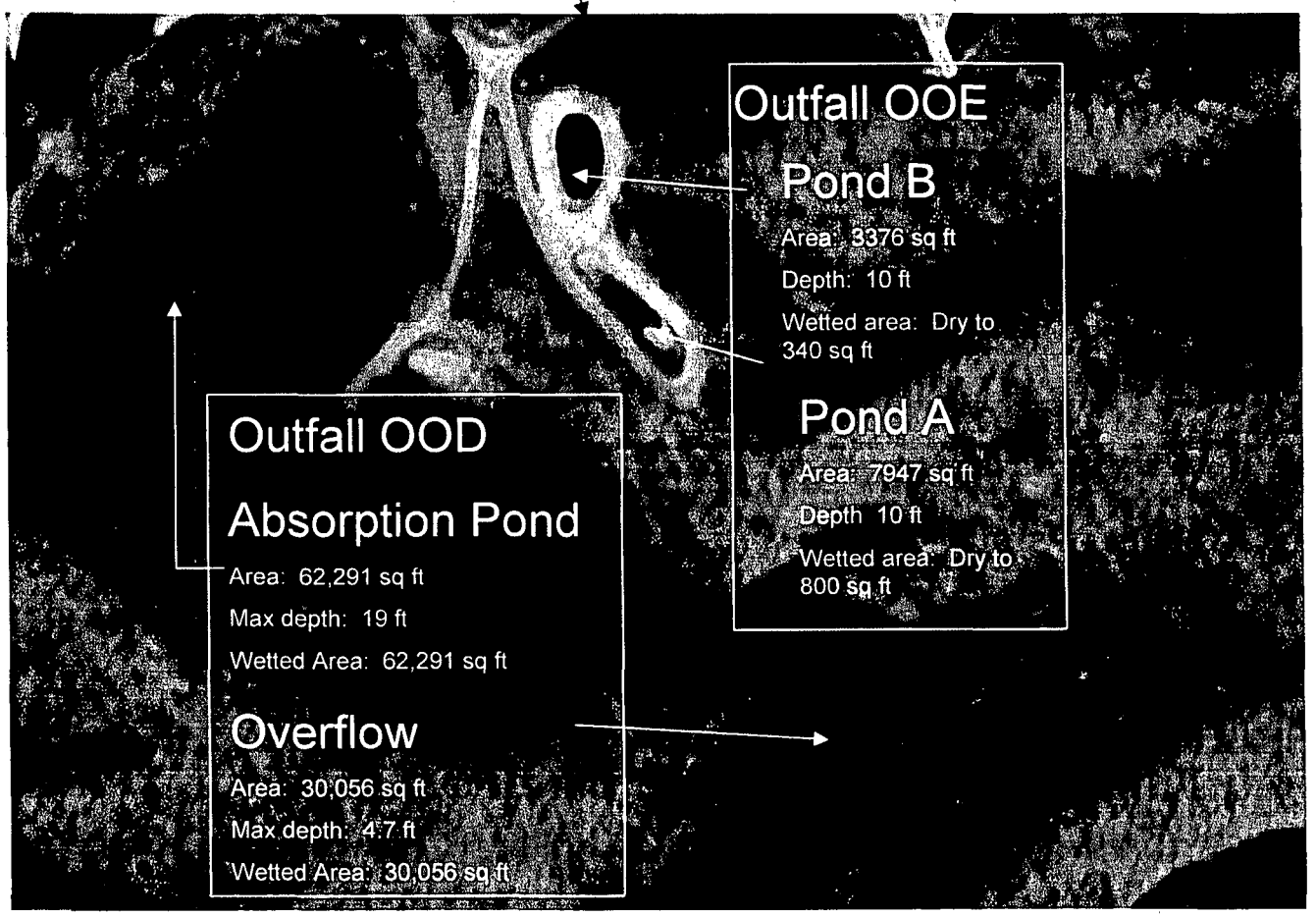

Cook Nuclear Plant – Bridgman Michigan
North
Well 19
Well 12
Well 13
Outfall 00D:
Absorption Pond
Abs. Pond Overflow
Outfall 00E: Sewage Lagoon B
Outfall 00E: Sewage Lagoon A
Well 1A
Well 16
(upgradient)
Well 8
(Upgradient)



✧ Groundwater sampling well locations

Distance from discharge 00D South property line: 1200' Lake Michigan: 1000' East property line: 3600' North property line: 2600'	Distance from discharge 00E South property line: 1300' Lake Michigan: 1500' East property line: 3400' North property line: 2600'	Cook Nuclear Plant Berrien County Lake Township Scale: 1" = 1250'


North property line
Lake Michigan
See detail below
Livingston Road (South property line)


Outfall OOE
Pond B
Area: 3376 sq ft
Depth: 10 ft
Wetted area: Dry to 340 sq ft
Pond A
Area: 7947 sq ft
Depth 10 ft
Wetted area: Dry to 800 sq ft
Outfall OOD
Absorption Pond
Area: 62,291 sq ft
Max depth: 19 ft
Wetted Area: 62,291 sq ft
Overflow
Area: 30,056 sq ft
Max depth: 4.7 ft
Wetted Area: 30,056 sq ft

Tab 5
Part 15 Adj. Property owners

Michigan Department of Environmental Quality-Surface Water Quality Division

Groundwater Discharge Permit Application

SECTION 15 – Adjacent Property Owners

PLEASE TYPE OR PRINT

FACILITY NAME	PERMIT NUMBER
Donald C. Cook Nuclear Plant	GW1810102

15. List adjacent property owners

List the names and addresses of all property owners adjacent to the facility, treatment systems, and discharge locations. List this information in the space provided below or include the information as an attachment on 8 1/2" x 11" paper. If additional space is necessary, copy this blank page and attach this information to this application.

Location	Property Number	Name	Address
NORTH			
Grand Mere State Park	11-11-0006-0002-03-1	Michigan Department of Natural Resources	PO Box 30735 Lansing, MI 48909
Rosemary Beach	11-11-0006-0004-02-5	Rosemary Beach Corp.	C/O Secretary 3415 S. 59 St. Cicero IL 60650
Rosemary Beach	11-11-0006-0004-00-9	Franklin Real Estate	c/o Indiana Michigan Power Co. PO Box 16428 Columbus OH 43216 Attn: Tax section.
Rosemary Beach	11-11-0006-0004-01-7	Caparo, William E. & Oyler, Kathryn E.	122 S. Ellsworth Pl. South Bend, IN 46635
Rosemary Beach	11-11-0006-0004-04-1	Temmel, Edward P.	9617 E. Shore Dr. Oak Lawn IL 60453
Rosemary Beach	11-11-0006-0004-09-2	Mcaloon, Sharon	1707 Dumont Ln Schaumburg, IL 60194
Rosemary Beach	11-11-0006-0004-05-0	West, Kathleen M. Trustee	3423 N. Seminary Ave Chicago, IL 60657
Rosemary Beach	11-11-0006-0004-10	Olofsson, Erik J.	PO Box 74 Stevensville, MI 49127
Rosemary Beach	11-11-0006-0004-11	Olofsson, Harold W.	PO Box 299 Oak Lawn, IL 60454
Rosemary Beach	11-11-0006-0004-12	Addante, Joseph	576 Hawhorne Elmhurst IL 60126-3301
Rosemary Beach	11-11-6800-0026-10	O'Malley, Sean A. + Wyse, Jeffery D.	5025 N. Central Park Chicago, IL 60625
Rosemary Beach	11-11-6800-0026-09	O'Malley, Sean A. + Wyse, Jeffery D.	5025 N. Central Park Chicago, IL 60625
Rosemary Beach	11-11-6800-0027-02-0	Herbert, Rosemary C.	22 S. Archer Ave Mundelein IL 60060
Rosemary Beach	11-11-6800-0028-00-0	Herbert, Rosemary C.	22 S. Archer Ave Mundelein IL 60060
Rosemary Beach	11-11-6800-0028-01-8	Balka, Janet M.	3334 Louise Dr. Lansing, IL 60438
Rosemary Beach	11-11-6800-0030-02-1	Gottschall, Bruce A. & Susan M.	5760 S. Blackstone Chicago, IL 60637
Rosemary Beach	11-11-6800-0032-01-5	Giese Marie E.	4291 Lake Road Stevensville, MI 49127
Rosemary Beach	11-11-6800-0033-00-3	Gilpin, Nancy	714 S Dearborn #8 Chicago, IL 60605
Rosemary Beach	11-11-6800-0036-00-2	Lewis, James G. Jr.	4183 Lake Ct. Stevensville, MI 49127
Rosemary Beach	11-11-6800-0037-00-9	Kobler, Rich +Matthews, Larry.	4155 Lake Road Stevensville, MI 49127
Rosemary Beach	11-11-6800-0037-01-7	Gielniewski, Michael Z. & Teresa B.	1113 Independence Road Bartlett, IL 60103

GW1810102

Location	Property Number	Name	Address
Rosemary Beach	11-11-6800-0037-02-5	Tengerstrom Eric H. Trustee LE & Martin, Holly	7470 Rosemary Rd Stevensville, MI 49127
Rosemary Beach	11-11-6800-0038-00-5	Tengerstrom, Eric H. Trustee LE & Martin, Holly	7470 Rosemary Rd Stevensville, MI 49127
NORTH	11-11-0005-0029-00-3	Technisand, Inc.	PO Box 177 Wedron, IL 60557
NORTH	11-11-0005-0027-00-1	Technisand, Inc.	PO Box 177 Wedron, IL 60557
NORTH	11-11-0005-0036-01-8	Ruff, Timothy W.	7500 Thorton Dr. Stevensville, MI 49127
NORTH	11-11-0005-0036-06-9	Emery, Martin; Hopkins, Elwood J. & Mable N.;	7499 Thorton Dr. Stevensville, MI 49127
NORTH	11-11-0005-0036-02-6	Indiana Michigan Power Company	C/O. PO Box 16428 Columbus OH 43216 Attn: Tax section.
EAST	11-11-0005-0024-00	Marshke, Dale A.	7552 Jericho Road Stevensville MI 49127
EAST	11-11-0005-0016-00	Westlake, Anita	7622 Red Arrow Highway Stevensville, MI 49127
EAST (VISITOR CENTER)	11-11-0005-0002-01-6	Blue Jay Assoc.	C/O. PO Box 16428 Columbus OH 43216 Attn: Tax section.
EAST		Interstate I-94	Michigan Dept of State Highways
SOUTH	11-11-0008-06-00	Indiana Michigan Power Company	C/O. PO Box 16428 Columbus OH 43216 Attn: Tax section.
SOUTH	11-11-0008-0041-00-8	Michigan Dept. of Transportation	Lansing MI 48900
SOUTH	11-11-0008-0009-00-7	Franklin Real Estate	C/O PO Box 16428 Columbus OH 43216 Attn: Tax section..
SOUTH	11-11-0007-0013-00-6	Lake Charter Twp.	Shawnee Rd. Bridgman, MI 49106
SOUTH	11-11-0007-0013-01-4	Lake Charter Twp.	Shawnee Rd. Bridgman, MI 49106
SOUTH	11-11-0007-0006-01-8	Indiana Michigan Power Company	C/O PO Box 16428 Columbus OH 43216 Attn: Tax section.
SOUTH	11-11-0007-0004-01-5	Lake Charter Twp.	Shawnee Rd. Bridgman, MI 49106
SOUTH	11-11-0007-0001-01-6	Lake Charter Twp.	Shawnee Rd. Bridgman, MI 49106
WEST		Lake Michigan	State of Michigan and United States of America

Tab 6

Part 11 Water usage diagram

Section 11
GW1810102

Outfall	Description	2006-2007 AVG Flow in MGD
NA	Inlet - Lake Twp Water Source	0.042
001	U-1 Circ. Water	974
002	U-2 Circ. Water	1137
003	De Ice	-
00A	U-1 SG Blowdown	0.116
00B	U-2 SG Blowdown	0.240
00C	Htg Blr Discharge	0.00001
00D	TRS Discharge	0.407
00E	Sewage Treatment Plant	0.020
00G	RO Reject Flow	0.264
00H	TRS Emergency Overflow	0.00008

WASTEWATER FLOW DIAGRAM

DONALD C. COOK NUCLEAR PLANT

DEFINITIONS
NESW-NONESSENTIAL SERVICE WATER
ESW-ESSENTIAL SERVICE WATER
MDT-MISC. DRAIN TANK
Chemical Addition points

OUTFALL 001
U1 CIRCULATING WATER
DISCHARGE 1200' OFFSHORE

INTAKE CRIBS 2250' OFFSHORE

OUTFALL 003
INTAKE CRIBS 2250' OFFSHORE

INTAKE CRIBS 2259' OFFSHORE

OUTFALL 002
U2 CIRCULATING WATER
DISCHARGE 1200' OFFSHORE

LAKE MICHIGAN

INTAKE FOREBAY

UNIT 1 DISCHARGE BAY

UNIT 2 DISCHARGE BAY

ESW 28.8 MGD

NESW 13.0 MGD

UNIT 1 STEAM CONDENSER

UNIT 2 STEAM CONDENSER

UNIT 1 STEAM GENERATOR

UNIT 2 STEAM GENERATOR

DRAINING

DRAINING/MDT OVERBOARDING 0.35MGD

CONDENSATE SYSTEM DRAINS

FLOW METER

PROCESSED GLYCOL

CLOSED COOLING LOOP SYSTEM DRAINS

MONITOR TANKS

PROCESSED AUXILIARY BLDG WATER

ICEMELT AND BATCHING OPERATIONS

OUTFALL 00A

OUTFALL 00H

OUTFALL 00G

FLOWMETER

RO SYSTEM REJECT

NONESSENTIAL SERVICE WATER

Sodium Hypochlorite

Sodium Bisulfite Sulfuric Acid addition

MISC. LOADS

4 STORMWATER ROADWAY DRAINS

OUTFALL 00B

0025 STORMWATER*

0035 STORMWATER*

0045 STORMWATER*

SOUTH SECURITY TRANSFORMER CATCHBASIN DRAINS

CONDENSATE STORAGE TANK EMERGENCY DRAINS

* In addition to Stormwater outfall sources as listed, typical drainage sources such as rooftops, Parking lots, Roadways exist as detailed in the Cook Plant SWPPP.

Carbohydrazide Ethanolamine addition

FIRE PROTECTION

LAKE TOWNSHIP POTABLE WATER SUPPLY

ALTERNATE HEATING BOILER

HEATING BOILER

FROM MAKE-UP WATER PLANT

CONDENSATE SYSTEM

OFFICE BLDG. & RPAC TRANSFORMER CATCHBASIN DRAINS

CONDENSATE STORAGE TANK EMERGENCY DRAINS

SECURITY DIESEL NON-CONTACT COOLING WATER

0015 STORMWATER*

LAYUP DRAINS TO TURBINE ROOM SUMP

OUTFALL 00C

NORMAL FLASH TANK

START-UP FLASH-TANK

PLANT SITE SANITARY & KITCHEN WASTE

RADIOGRAPHIC PROCESSING LABORATORY WASTE

PHOTO LAB

TRAINING BUILDING CHEMISTRY LAB WASTE

TRAINING BUILDING HVAC SYSTEM WASTE

LIMESTONE BED AND NEUTRALIZATION TANK

EAST EXTENDED AERATION PLANT

SEQUENCING BATCH REACTOR

FLOW METER

OUTFALL 00E

(Seepage Lagoon)

LAYUP DRAINS

Carbohydrazide Ethanolamine addition

EMERGENCY OVERFLOW

MAKE-UP WATER PLANT

NEUTRALIZATION TANK

TURBINE ROOM SUMP

UNIT 1 COMPONENT COOLING WATER DRAINING

UNIT 2 COMPONENT COOLING WATER DRAINING

MISC. SECONDARY SYSTEM SAMPLE RACK DRAINS 0.0085 MGD

NON-RADIOLOGICAL CHEMISTRY LAB DRAINS

FLOW METER

OUTFALL 00D

(Seepage Lagoon)

EMERGENCY DIESEL JACKET WATER DRAINS

Neutralization Chemicals: Sodium Hydroxide and Sulfuric Acid.

IN-PLANT SUMPS MISC. FLOOR DRAINS 0.045 MGD

UNIT 1/UNIT 2 MAIN TRANSFORMER DECK DRAINS (STORMWATER)

UNIT 1/UNIT2 CATCHBASIN OIL/WATER SEPARATOR

UNIT 1/UNIT2 DRY WELLS

GROUNDWATER

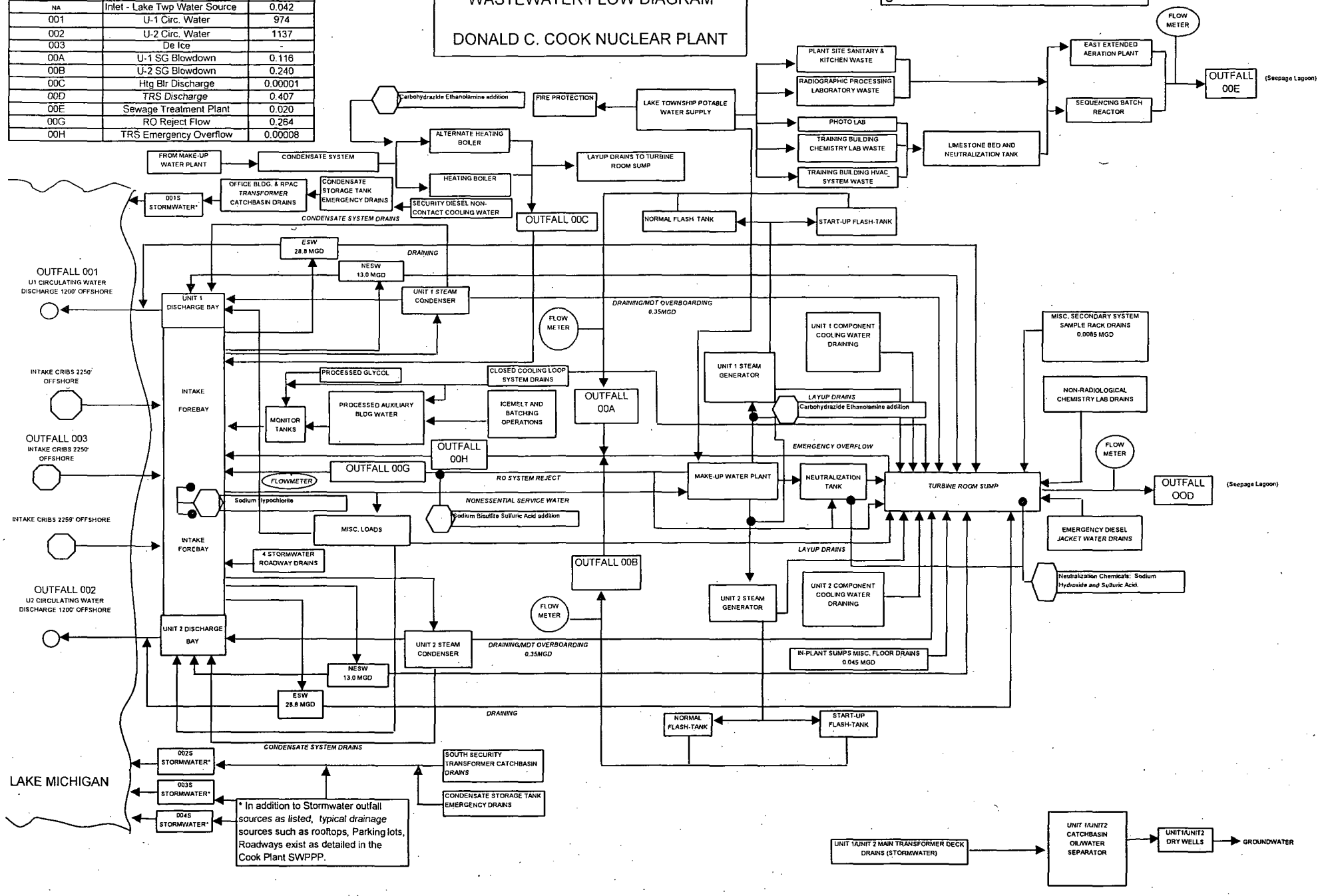
Section 11
GW1810102

Outfall	Description	2006-2007 AVG Flow in MGD
NA	Inlet - Lake Twp Water Source	0.042
001	U-1 Circ. Water	974
002	U-2 Circ. Water	1137
003	De Ice	-
00A	U-1 SG Blowdown	0.116
00B	U-2 SG Blowdown	0.240
00C	Htg Blr Discharge	0.00001
00D	TRS Discharge	0.407
00E	Sewage Treatment Plant	0.020
00G	RO Reject Flow	0.264
00H	TRS Emergency Overflow	0.00008

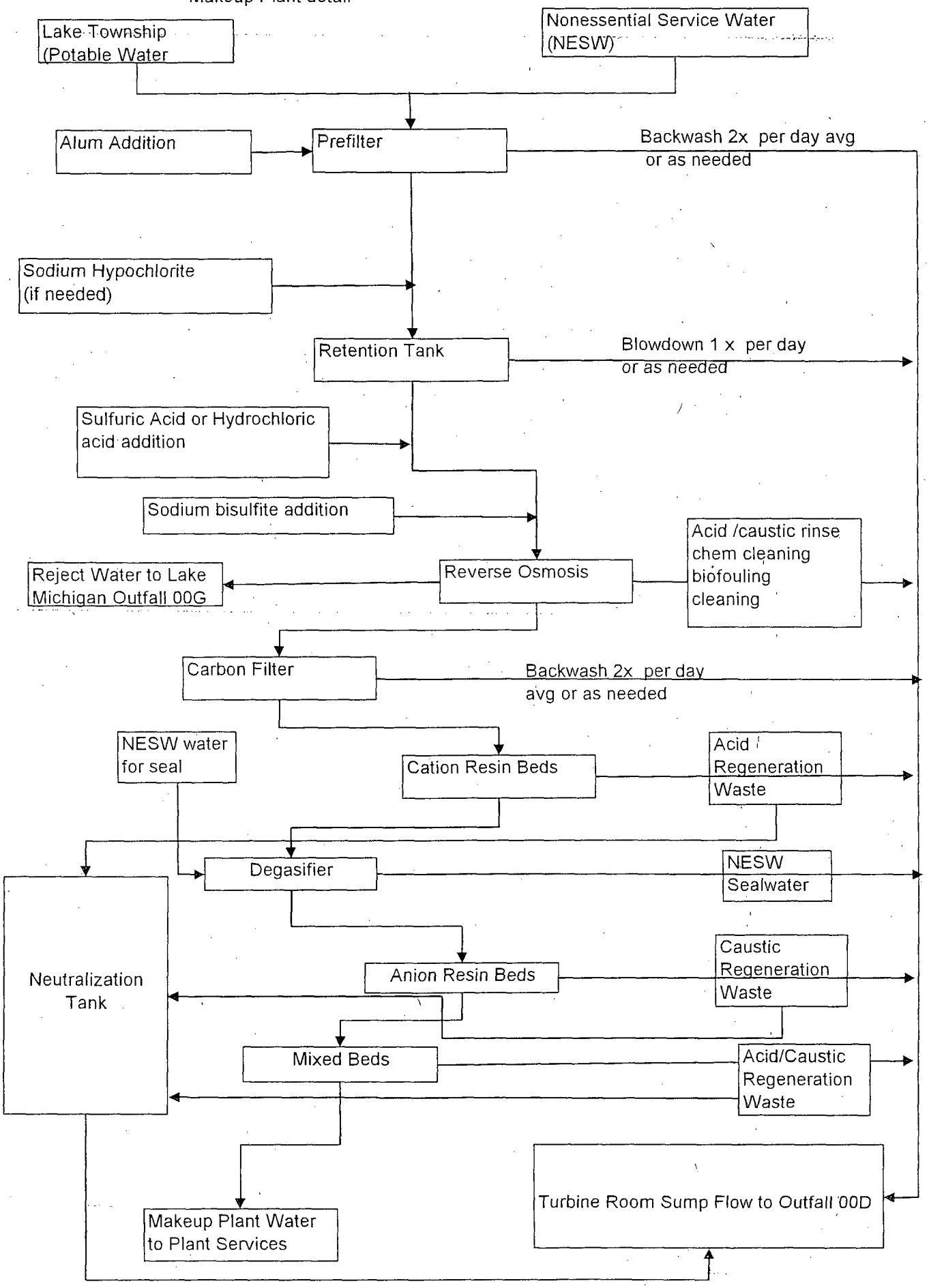
WASTEWATER FLOW DIAGRAM

DONALD C. COOK NUCLEAR PLANT

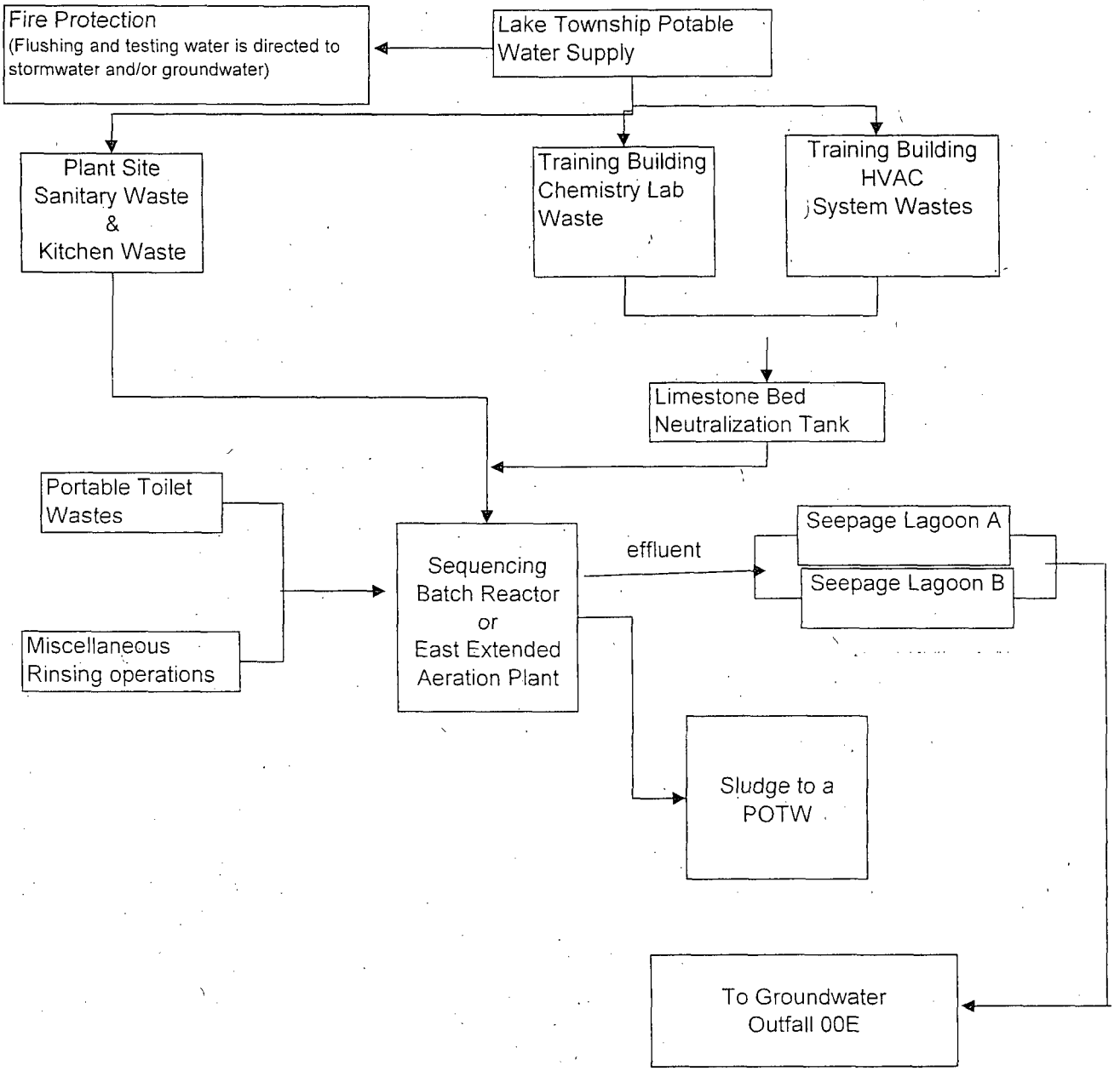
DEFINITIONS
NESW-NONESSENTIAL SERVICE WATER
ESW-ESSENTIAL SERVICE WATER
MDT-MISC. DRAIN TANK
Chemical Addition points



Cook Nuclear Plant Wastewater Flow Diagram GW1810102
Makeup Plant detail



Cook Nuclear Plant Wastewater flow diagram GW1810102
Sewage treatment plant detail



Tab 7
Water usage narrative

SECTION 11

Waste Stream Narrative

This narrative describes all outfalls discharging to Lake Michigan. Flows are based on a review of previous NPDES applications, Plant system descriptions, or previously submitted Discharge Monitoring Reports (DMR). The chemical additives described below may include a manufacturer's name as an example of the type of product used in a specific system. Indiana Michigan Power may substitute vendors of chemical additives provided that the chemical ingredients are similar. Discharge values are based on maximum release rates and volumes, dilution rates are based on a minimum number of pumps running.

OUTFALL 001 - Unit 1 Circulating Water Discharge

Outfall 001 is a non-contact cooling water discharge. The majority of non-contact cooling water (Circulating Water System, ~690,000 GPM) is used to condense the steam exhausting from steam driven turbines. Non-contact cooling water is drawn from Lake Michigan approximately one-half mile from shore through three 16 ft. diameter tunnels. Water enters the tunnels via intake cribs at an approximate velocity of 1.3 feet per second. The water enters to a forebay where it is screened to remove large debris that may be entrained in the water. It is routed through the Unit 1 condensers and then discharged to Lake Michigan through a 16 foot diameter tunnel. The water exits the tunnels through high velocity discharges at a rate of approximately 13 feet per second approximately 1/4 mile from shore. Outfall 001 also includes internal Outfalls (as designated by the Michigan Department of Environmental Quality) Steam Generator Blowdown (00A, 00B), Plant Heating Boiler (00C), Reverse Osmosis Unit (00G), and the Turbine Room Sump Emergency Overflow (00H) described in detail later in this document.

Outfall 001 also may contain the effluent flow from both Units' Essential Service Water (ESW) systems, both Units' Non-Essential Service Water (NESW) system, and monitor tank releases. ESW (~40,000 GPM) is Lake Michigan water taken from the forebay that is used to provide cooling to safety-related equipment. NESW (~18,000 GPM) is also Lake Michigan water taken from the forebay used for

non-contact cooling for various plant systems including oil coolers, a source of water for the demineralized makeup system (MUP), and a water supply for non-safety related equipment. Monitor tank releases (~15,000 to 20,000 gallons per event) are regulated by the NRC and consist of wastewater from various system and equipment leakage that may be generated within the auxiliary building area. Minor leakage from systems containing lube oil, hydrazine, carbohydrazide, ethanolamine or closed-loop cooling systems containing a maximum concentration of gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm), and nitrite (1200 ppm), may be discharged via monitor tank releases.

The non-contact cooling water for the Circulating Water, the ESW and the NESW, and Miscellaneous Sealing and Cooling Water Systems is treated for biological control using sodium hypochlorite. This same water is periodically treated using a non-oxidizing biocide to eradicate zebra mussels from the cooling systems. The biocides (Betz Spectrus CT-1300, Calgon H-130M, Calgon EVAC and NALCO Macro-Trol 9380) are polyquats, and are used as required to protect plant systems while meeting water quality based effluent limits. The treatments can be directed to various critical plant systems from the intake structures through the entire plant cooling system, including the Circulating Water System, ESW and NESW systems and other non-contact cooling water. The biocide may be added to the systems via a chemical injection pipeline through a ring header located inside the intake crib, or directly applied at a specific system. A chemical injection pipeline may be installed and is designed to feed chemicals from inside the plant. The intake chemical injection header may be stored with chemical inside the pipe to prevent zebra mussel infestation. The header may also be leak checked using approved dyes such as fluorescein, or other indicators such as Nalco Trasar 23299. Non-contact cooling systems biocide treatments are dependent upon zebra mussel infestation. Concentrations and chemical feed points are chosen to minimize the amount of biocide required and to maximize the efficacy on zebra mussels. Bentonite clay may be added to detoxify the biocide prior to discharge. The plant non-contact cooling water systems may be treated concurrently or individually to allow more efficient use of chemicals. Plant systems are treated to assure safe operation of the nuclear generating units.

The piping used to apply chemicals is regularly cleaned of calcium carbonate scale buildup. A small amount of weak acid cleaner such as Betz FerroQuest FQ LP 7200 may be used to remove accumulated carbonate scale deposits. The accumulated deposits will be discharged via Outfalls 001/003. Circulating water will dilute the weak acid prior to discharge to Lake Michigan.

Condensate flushes are performed periodically to purge the plant's secondary water system from layup chemistry specifications during shutdown conditions to startup chemistry specifications prior to startup of the unit. Water containing up to 4 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboarded to Outfall 001 as required to remove contaminants to meet desired startup secondary Chemistry specifications. This flowrate averages 70 GPM, but may reach 600 GPM for short periods of time. The flowrate is dependent on chemistry specification parameters and makeup water availability. The maximum output from the MUP is approximately 600 GPM or 864,000 GPD. (See Outfalls 00A, 00B for further description.)

Monitor tanks receive treated water from the auxiliary building radioactive waste removal system and other sources such as ice production and removal processes from the ice condenser systems and other radioactively contaminated wastes generated at the facility. This system handles wastes generated from the reactor coolant pump seal leakoffs, the refueling cavity water, equipment leaks, floor drains, valve stem leakoffs, system sampling, and waste sample solutions. It also handles laboratory wastes from the radiochemistry analysis in the hot chemical laboratory, system equipment drains, non-contact cooling water, ice production/removal and decontamination processes and any contaminated liquid waste generated in the auxiliary building area. The wastes are collected in one of several tanks and are treated when enough water is collected. The treatment utilizes a demineralizer system to minimize radioactive contaminants. A small amount of wastewater may bypass the treatment because it cannot be processed by resin.

Other special drains of non-radioactive process water systems such as Component Cooling Water system flushes with biocides such as gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm) and nitrite (1200 ppm), and borated icemaking/ice removal operations, can be routed directly to the plant's monitor tanks without treatment. For maintenance purposes to prevent microbial growth, Component Cooling Water flushes are performed generating approximately 281,000 gallons per year of flushwater to the monitor tanks.

Borated icemaking/ice removal operations occur for maintenance of the plant's ice condenser systems. This process produces a solution of sodium tetraborate (approximately 2200 ppm as boron) that can be drained to the monitor tanks. This process takes place approximately every 18 months and may produce up to 70,000 gallons of sodium tetraborate solution.

Both the treated wastewater and the special drains are accumulated in the monitor tanks and sampled to ensure the waste meets the radiological requirements prior to being discharged into the Circulating Water System.

Periodically, due to equipment leaks and/or system upsets, a waste stream is generated that contains radioactively contaminated ethylene glycol and water. Incidental amounts of ethylene glycol generated from equipment leaks may be drained directly to the monitor tanks or treated by the radwaste processing system. Small amounts of ethylene glycol may be discharged to outfalls 001, 002, or 003.

Sulfur hexafluoride gas (SF6) is utilized in the non-contact cooling water systems at the plant to detect leaks in various components such as the condensers. The gas is injected in the cooling water stream and discharged to outfalls 001, 002 or 003 at less than 54 ul/l.

Aryl sulfate liquid (NALCO Trasar 23299) is utilized in the non-contact cooling water systems at the plant to determine flow through various parts of the system. The liquid is injected into the service water system to reach a target concentration of approximately 2 mg/l. The service water is discharged to Outfalls 001, 002, or 003, which would, in turn, discharge at less than 0.15 mg/l. The liquid is also injected into the circulating water system to reach a target concentration of approximately 2 mg/l.

Control Room Air Conditioning (CRAC) testing: Approximately 1440 gallons/yr. of CRAC water may mix with ESW and then be discharged to the forebay during a monthly test of the system. CRAC water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Biotrol 107 (Spectrus NX 1105), Calgon H-300, or equivalent], 60 ppm tolyltriazole [from Calgon LCS-60, Betz AZ8101, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 10 ppm methyl (bis) thiocyanate (from Betz 3610), 1000 ppm molybdate from Betz Corrshield MD 4103, and Betz Ferroquest FQ7101 and FQ7102 for CRAC HX cleaning.

Three roadway storm drains route small amounts of stormwater from a small section of roadway that traverses over the Circulating Water Forebay. The three storm drains are designed to route accumulated stormwater from this small roadway to the forebay below. A small amount of de-icing compound used on this section of road could potentially enter these small (Approximately 8") gratings. Screened material collected from the plant's intakes is also stored in this area in designated trash dumpsters. Fish exudiates are now drained to the forebay as recommended by the MDEQ stormwater and NPDES inspection team (M. Fields and J. Molloy 1997).

During upset conditions it is possible to overflow the contents of the Turbine Room Sump (See Outfall 00H) to Outfalls 001, 002 and/or 003 if the flow path to the on-site absorption pond cannot be used.

OUTFALL 002 - Unit 2 Circulating Water Discharge

Outfall 002 is a non-contact cooling water discharge. The majority of non-contact cooling water (Circulating Water System, ~920,000 GPM) is used to condense the steam exhausting from steam driven turbines. Non-contact cooling water is drawn from Lake Michigan approximately one-half mile from shore through three 16 ft. diameter tunnels. Water enters the tunnels via intake cribs at an approximate velocity of 1.3 feet per second. The water enters to a forebay where it is screened to remove large debris that may be entrained in the water. It is routed through the Unit 2 condensers and then discharged to Lake Michigan through an 18 foot diameter tunnel. The water exits the tunnels through high velocity discharges at a rate of approximately 13 feet per second approximately 1/4 mile from shore. Outfall 002 also includes internal Outfalls (as designated by the Michigan Department of Environmental Quality) Steam Generator Blowdown (00A, 00B), Plant Heating Boiler (00C), Reverse Osmosis Unit (00G), and the Turbine Room Sump Emergency Overflow (00H) described in detail later in this document.

Outfall 002 also may contain the effluent flow from both Units' Essential Service Water (ESW) systems, both Units' Non-Essential Service Water (NESW) system, and monitor tank releases. ESW (~40,000 GPM) is Lake Michigan water taken from the forebay that is used to provide cooling to safety-related equipment. NESW (~18,000 GPM) is also Lake Michigan water taken from the forebay used for

non-contact cooling for various plant systems including oil coolers, a source of water for the demineralized makeup system (MUP), and a water supply for non-safety related equipment. Monitor tank releases (~15,000 to 20,000 gallons per event) are regulated by the NRC and consist of wastewater from various system and equipment leakage that may be generated within the auxiliary building area. Minor leakage from systems containing lube oil, hydrazine, carbohydrazide, ethanolamine or closed-loop cooling systems containing a maximum concentration of gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm), and nitrite (1200 ppm), may be discharged via monitor tank releases.

The non-contact cooling water for the Circulating Water, the ESW and the NESW, and Miscellaneous Sealing and Cooling Water Systems is treated for biological control using sodium hypochlorite. This same water is periodically treated using a non-oxidizing biocide to eradicate zebra mussels from the cooling systems. The biocides (Betz Spectrus CT-1300, Calgon H-130M, Calgon EVAC and NALCO Macro-Trol 9380) are polyquats, and are used as required to protect plant systems while meeting water quality based effluent limits. The treatments can be directed to various critical plant systems from the intake structures through the entire plant cooling system, including the Circulating Water System, ESW and NESW systems and other non-contact cooling water. The biocide may be added to the systems via a chemical injection pipeline through a ring header located inside the intake crib, or directly applied at a specific system. A chemical injection pipeline may be installed and is designed to feed chemicals from inside the plant. The intake chemical injection header may be stored with chemical inside the pipe to prevent zebra mussel infestation. The header may also be leak checked using approved dyes such as fluorescein, or other indicators such as Nalco Trasar 23299. Non-contact cooling systems biocide treatments are dependent upon zebra mussel infestation. Concentrations and chemical feed points are chosen to minimize the amount of biocide required and to maximize the efficacy on zebra mussels. Bentonite clay may be added to detoxify the biocide prior to discharge. The plant non contact cooling water systems may be treated at the concurrently or individually to allow more efficient use of chemicals. Plant systems are treated to assure safe operation of the nuclear generating units.

The piping used to apply chemicals is regularly cleaned of calcium carbonate scale buildup. A small amount of weak acid cleaner such as Betz FerroQuest FQ LP 7200 may be used to remove accumulated carbonate scale deposits. The accumulated deposits will be discharged via Outfalls 002/003. Circulating water will dilute the weak acid prior to discharge to Lake Michigan.

Condensate flushes are performed periodically to purge the plant's secondary water system from layup chemistry specifications during shutdown conditions to startup chemistry specifications prior to startup of the unit. Water containing up to 4 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboarded to Outfall 002 as required to remove contaminants to meet desired startup secondary Chemistry specifications. This flowrate averages 70 GPM, but may reach 600 GPM for short periods of time. The flowrate is dependent on chemistry specification parameters and makeup water availability. The maximum output from the MUP is approximately 600 GPM or 864,000 GPD. (See Outfalls 00A, 00B for further description.)

Monitor tanks receive treated water from the auxiliary building radioactive waste removal system and other sources such as ice production and removal processes from the ice condenser systems and other radioactively contaminated wastes generated at the facility. This system handles wastes generated from the reactor coolant pump seal leakoffs, the refueling cavity water, equipment leaks, floor drains, valve stem leakoffs, system sampling, and waste sample solutions. It also handles laboratory wastes from the radiochemistry analysis in the hot chemical laboratory, system equipment drains, non-contact cooling water, ice production/removal and decontamination processes and any contaminated liquid waste generated in the auxiliary building area. The wastes are collected in one of several tanks and are treated when enough water is collected. The treatment utilizes a demineralizer system to minimize radioactive contaminants. A small amount of wastewater may bypass the treatment because it cannot be processed by resin.

Other special drains of non-radioactive process water systems such as Component Cooling Water system flushes with biocides such as gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm) and nitrite (1200 ppm), and borated icemaking/ice removal operations, can be routed directly to the plant's monitor tanks without treatment. For maintenance purposes to prevent microbial growth, Component Cooling Water flushes are performed generating approximately 281,000 gallons per year of flushwater to the monitor tanks.

Borated icemaking/ice removal operations occur for maintenance of the plant's ice condenser systems. This process produces a solution of sodium tetraborate (approximately 2200 ppm as boron) that can be drained to the monitor tanks. This process takes place approximately every 18 months and may produce up to 70,000 gallons of sodium tetraborate solution.

Both the treated wastewater and the special drains are accumulated in the monitor tanks and sampled to ensure the waste meets the radiological requirements prior to being discharged into the Circulating Water System.

Periodically, due to equipment leaks and/or system upsets, a waste stream is generated that contains radioactively contaminated ethylene glycol and water. Incidental amounts of ethylene glycol generated from equipment leaks may be drained directly to the monitor tanks or treated by the radwaste processing system. Small amounts of ethylene glycol may be discharged to outfalls 001, 002, or 003.

Sulfur hexafluoride gas (SF6) is utilized in the non-contact cooling water systems at the plant to detect leaks in various components such as the condensers. The gas is injected in the cooling water stream and discharged to outfalls 001, 002 or 003 at less than 54 ul/l.

Aryl sulfate liquid (NALCO Trasar 23299) is utilized in the non-contact cooling water systems at the plant to determine flow through various parts of the system. The liquid is injected into the service water system to reach a target concentration of approximately 2 mg/l. The service water is discharged to Outfalls 001, 002, or 003, which would, in turn, discharge at less than 0.15 mg/l. The liquid is also injected into the circulating water system to reach a target concentration of approximately 2 mg/l.

Control Room Air Conditioning (CRAC) testing: Approximately 1440 gallons/yr. of CRAC water may mix with ESW and then be discharged to the forebay during a monthly test of the system. CRAC water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Biotrol 107 (Spectrus NX 1105), Calgon H-300, or equivalent], 60 ppm tolyltriazole [from Calgon LCS-60, Betz AZ8101, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 10 ppm methyl (bis) thiocyanate (from Betz 3610), 1000 ppm molybdate from Betz Corrshield MD 4103, and Betz Ferroquest FQ7101 and FQ7102 for CRAC HX cleaning.

Three roadway storm drains route small amounts of stormwater from a small section of roadway that traverses over the Circulating Water Forebay. The three storm drains are designed to route accumulated stormwater from this small roadway to the forebay below. A small amount of de-icing compound used on this section of road could potentially enter these small (Approximately 8") gratings. Screened material collected from the plant's intakes is also stored in this area in designated trash dumpsters. Fish exudiates are now drained to the forebay as recommended by the MDEQ stormwater and NPDES inspection team (M. Fields and J. Molloy 1997).

During upset conditions it is possible to overflow the contents of the Turbine Room Sump (See Outfall 00H) to Outfalls 001, 002 and/or 003 if the flow path to the on-site absorption pond cannot be used.

OUTFALL 003 - Deicing Discharge

Outfall 003 is a deicing discharge which is used when water temperatures approach freezing temperatures. A portion of the flow from Outfall 001 and /or Outfall 002 is directed through the center intake tunnel to temper the intake water and prevent ice buildup on the intake structures which could restrict intake flow. The velocity at the other two intake structures during de-icing mode increases to approximately 1.9 feet per second. Discharge velocity will be less that 13 feet per second since a portion of the discharge is routed out the center intake tunnel.

The Essential and Non-Essential Service Water System (ESW and NESW) may be recirculated with a combination of Circulating Water Pumps in service to raise the forebay temperature to prevent frazil ice formation during cold weather periods. During shutdown conditions when normal operating heat addition is not available, portable heat addition units may be placed in the forebay to prevent frazil ice formations that may prevent flow to safety systems in the plant.

OUTFALL 00A - Unit 1 Steam Generator Blowdown

The steam generators (part of the secondary water system) require ultra high purity water for operation. Makeup water used in the steam generators is withdrawn from the intake forebay (or from Lake Township water supply or a blending of both sources) and treated so most natural impurities are removed through sedimentation, filtration, reverse osmosis, and demineralization. Impurities concentrate in the steam generators as the water is turned to steam and must be removed to protect the steam turbines and

heat transfer surfaces of the steam generators. The impurities are removed by continuously draining a portion of the water from the steam generators in a process called "blowdown".

In the steam generator, steam is separated from the water, further heated, and then routed to the turbines. When the steam separates from the water, the impurities remain in the water, concentrating in the steam generator. Blowdown consists of two forms, a liquid portion (700 gpm max) and a wet steam portion, which is exhausted to the atmosphere. The liquid portion of the steam generator blowdown is discharged to the screenhouse forebay either directly (Normal Flash Tank), or after processing through mixed bed demineralizers. Impurities in this discharge may consist of small quantities of insoluble iron and copper or impurities from the Circulating Water System used to cool the condensers should condenser tube leaks occur. Steam generator additives consist of ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging.

When the units are not operating, the steam generators are placed in wet layup conditions to protect against corrosion during storage. Layup water is periodically discharged through the outfall to the Circulating Water Forebay. The layup water contains a maximum concentration of 400 ppm hydrazine [Betz Powerline Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent), and /or 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001). The waste strength of this discharge is reduced through mixing with Outfalls 001, 002, or 003.

During the **Sludge Lancing Process**, demineralized water or secondary water is used to pressure clean the steam generators during outage periods. The water is recirculated through temporary filters to remove entrained solids. The major constituent of the solids is iron oxide from the steam generators. The water is then returned to the steam generators and can be drained to Outfalls 00A, 00B, to Outfall 001, 002, 003, 00D or 00H. The suspended solids are analyzed for radioactivity prior to disposal.

OUTFALL 00B - Unit 2 Steam Generator Blowdown

The steam generators (part of the secondary water system) require ultra high purity water for operation. Makeup water used in the steam generators is withdrawn from the intake forebay (or from Lake Township water supply or a blending of both sources) and treated so most natural impurities are removed

through sedimentation, filtration, reverse osmosis, and demineralization. Impurities concentrate in the steam generators as the water is turned to steam and must be removed to protect the steam turbines and heat transfer surfaces of the steam generators. The impurities are removed by continuously draining a portion of the water from the steam generators in a process called "blowdown".

In the steam generator, steam is separated from the water, further heated, and then routed to the turbines. When the steam separates from the water, the impurities remain in the water, concentrating in the steam generator. Blowdown consists of two forms, a liquid portion (700 gpm max) and a wet steam portion, which is exhausted to the atmosphere. The liquid portion of the steam generator blowdown is discharged to the screenhouse forebay either directly (Normal Flash Tank), or after processing through mixed bed demineralizers. Impurities in this discharge may consist of small quantities of insoluble iron and copper or impurities from the Circulating Water System used to cool the condensers should condenser tube leaks occur. Steam generator additives consist of ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging.

When the units are not operating, the steam generators are placed in wet layup conditions to protect against corrosion during storage. Layup water is periodically discharged through the outfall to the Circulating Water Forebay. The layup water contains a maximum concentration of 400 ppm hydrazine [Betz Powerline Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent), and /or 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001). The waste strength of this discharge is reduced through mixing with Outfalls 001, 002, or 003.

During the **Sludge Lancing Process**, demineralized water or secondary water is used to pressure clean the steam generators during outage periods. The water is recirculated through temporary filters to remove entrained solids. The major constituent of the solids is iron oxide from the steam generators. The water is then returned to the steam generators and can be drained to Outfalls 00A, 00B, to Outfall 001, 002, 003, 00D or 00H. The suspended solids are analyzed for radioactivity prior to disposal.

OUTFALL 00C - Plant Heating Boiler

A heating boiler (150,000 lb/hr capacity) operates to supply plant heating and auxiliary steam when Unit 1 and/or Unit 2 are out of service. The boiler is also fired periodically for testing purposes to ensure its availability.

During periods when not in operation, the **heating boiler** may be stored full of treated boiler water containing up to 400 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and or 50 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for corrosion protection. Prior to use, this "wet lay-up" water is drained to Outfall 00C via blowdown, which discharges to the intake forebay. The volume drained is approximately 600 gallons. This boiler may also be occasionally drained for maintenance activities, approximately 6,000 gallons of treated boiler water would be directed to Outfall 00C or 00D/00H for such purposes.

Impurities from the boiler water consisting primarily of insoluble iron and copper are discharged via blowdown (30 GPM) to the intake forebay during operation as needed for Chemistry control. Boiler water treatment additives consist of up to 15 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, up to 150 ppb hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 150 ppb carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging.

Just after boiler shutdown, the boiler may be placed in dry layup. The boiler contents (up to 6,000 gallons) are drained via blowdown to the intake forebay. Boiler water treatment additives consist of up to 3 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment and up to 150 ppb hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 150 ppb carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging. The boiler is then dried out and stored empty. This process saves on chemicals and prevents unnecessary discharge of wet layup chemicals.

A smaller boiler may be installed to provide back-up heat if the permanent heating boiler was out of service. This back-up boiler may be located outdoors on the West Side of the turbine building. The blowdown line is directed to the Unit One forebay, near the same discharge point as the permanently installed heating boiler.

The same boiler treatment chemistry will be maintained in the back-up boiler as is used in the permanent heating boiler. The back-up boiler treatment additives consist of ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, and hydrazine [Betz Powerline Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging. This boiler may be occasionally drained for maintenance activities, approximately 6,000 gallons of treated boiler water would be directed to Outfall 00C for such purposes. Impurities from the boiler water consisting primarily of insoluble iron and copper are discharged via blowdown (30 GPM maximum) to the intake forebay during operation as needed for Chemistry control.

OUTFALL 00G - Reverse Osmosis System

The Reverse Osmosis System (RO) is used to assist in the removal of dissolved solids from the lake water prior to demineralization. Reject water flow is directed to the forebay, which leads to Outfalls 001, 002, and 003. Reject water flow rates may reach up to 0.366 MGD. The RO system must maintain very clean membranes to assure efficient operation and purity of water. Several methods are used to maintain this level of cleanliness from scale and biofouling. Hydrochloric acid or sulfuric acid is fed at approximately 1.3 GPH continually when the RO is in service to lower the pH to reduce the scaling tendencies of the water. The reject water from the RO unit consists of concentrated Lake Michigan water and a small amount of acid that inhibits scale buildup in the membranes.

Approximately once per month, a flush is performed using approximately 1,000 gallons of a nominal 0.05% hydrochloric acid solution. This is followed with approximately 1,000 gallons of a nominal 0.1% sodium hydroxide solution. This flush will dissolve any scale that deposits on the membranes. The total amount of flushing solution will average approximately 5,000 gallons per event. Sodium bisulfite is used to preserve the membranes during long-term shutdown periods. Approximately 15 lbs. of sodium bisulfite per year is used in this manner.

The chemical cleaning involves several steps and may contain citric acid, hydrochloric acid, phosphoric acid, sodium hydroxide, and a neutral pH detergent. The periodic cleaning process averages approximately 10,000 gallons per event, diverted either to the Turbine Room Sump (Outfall 00H/00D), through the Neutralization Tank to the Turbine Room Sump (Outfall 00H/00D), or to the Circulating Water Forebay (Outfall 001, 002, or 003).

OUTFALL 00H - Turbine Room Sump Emergency Overflow

Utility wastewater from within the plant is discharged via the turbine room sump (TRS) into an on-site absorption pond (Outfall 00D). The normal disposition of these wastewaters is to an on-site absorption pond, which eventually vents via groundwater to Lake Michigan. In the unlikely event that the normal flow path to the absorption pond is not available, the overflow line (Outfall 00H) will direct the TRS flow to the plant's intake forebay. The wastewaters associated with this Outfall include:

Wastes from the makeup water treatment system.

- **NESW**: (144,000 GPD) The main contributor to this waste stream is the degassifier pump seal water. Non-Essential Service Water (NESW) from Lake Michigan supplies the vacuum degassifier pumps which utilize up to 100 GPM to remove non-condensable gases (primarily carbon dioxide and oxygen) from the makeup plant water and exhausts them to the atmosphere.

- **Pre-filter backwash**: (Estimated 98,000 GPD) Six pre-filters are backwashed with Lake Michigan water to remove the suspended matter captured on the filter media. Alum solution (aluminum sulfate 0.5 lb. per gallon) is added to the pre-filter influent as a flocculent. The alum is added via a coagulant feed pump. Approximately 50 lb./day of alum is used in this process. The alum contained in the backwash is discharged in the form of insoluble aluminum hydroxide.

- **Carbon filter backwash**: (Estimated 42,000 GPD) Carbon filters are periodically backwashed with Lake Michigan water to the TRS. These filters primarily remove organics, chlorine and small amounts of iron.

- **Demineralizer regeneration:** (Estimated 50,000 gallons per regeneration) occurs 2-4 times per month when the RO is in service and more often when it is not in service. Dilute sulfuric acid and sodium hydroxide used by the system to regenerate the resin. Dilute sulfuric acid, sodium hydroxide, and contaminates from the demineralization process is discharged to the neutralization tank or TRS. The pH is then adjusted to between 5.5 and 9.0 with sulfuric acid, or sodium hydroxide prior to discharge.

- **MUP Neutralization Tank** provides a place for demineralization regeneration wastes, and Reverse Osmosis Unit cleaning flushes to be neutralized prior to being discharged to the TRS and ultimately

the absorption pond. When the MUP resin beds are regenerated, up to 50,000 gallons of regeneration chemicals, and backwash waters are processed in the neutralization tank. The Reverse Osmosis cleaning flushes average approximately 5,000 gallons per event. When the water is neutralized, it is pumped to the TRS via a 2,000 GPM neutralization waste pump.

- The **Retention Tank** is periodically blown down, discharging small volumes of solid material removed by settling. The retention tank contains a mixture of Lake Township water and filtered Lake Michigan water waiting further processing by the Makeup Plant.

- **The Reverse Osmosis System (RO) Cleaning**. Normal reject water flow is to Lake Michigan via Outfall 00G. The RO system must maintain very clean membranes to assure efficient operation and purity of water. Several methods are used to maintain this level of cleanliness from scale and biofouling. Hydrochloric acid or sulfuric acid is fed at approximately 1.3 GPH continually when the RO is in service to lower the pH to reduce the scaling tendencies of the water. The reject water from the RO unit consists of concentrated Lake Michigan water and a small amount of acid that inhibits scale buildup in the membranes.

  Approximately once per month, a flush is performed using approximately 1,000 gallons of a nominal 0.05% hydrochloric acid solution. This is followed with approximately 1,000 gallons of a nominal 0.1% sodium hydroxide solution. This flush will dissolve any scale that deposits on the membranes. The total amount of flushing solution will average approximately 5,000 gallons per event. Sodium bisulfite is used to preserve the membranes during long-term shutdown periods. Approximately 15 lbs. of sodium bisulfite per year is used in this manner.

  The chemical cleaning involves several steps and may contain citric acid, hydrochloric acid, phosphoric acid, sodium hydroxide, and a neutral pH detergent. The periodic cleaning process averages approximately 10,000 gallons per event, diverted either to the Turbine Room Sump (Outfall 00H), through the Neutralization Tank to the Turbine Room Sump (Outfall 00H), or to the Circulating Water Forebay (Outfall 001, 002, or 003).

Waste from miscellaneous processes.

- During periods when not in operation, the **heating boiler** may be stored full of treated boiler water containing at most 400 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and/or 50 ppm

ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for corrosion protection. Prior to use, this "wet lay-up" water is drained to the TRS. The volume drained is approximately 600 gallons.

- The Circulating Water System cooling water contained in the **condensers** during shutdowns are periodically drained to the TRS. (Six condenser halves and 2 feedpump condensers, approximately 37,000 gallons of lake water per half).

- The **Component Cooling Water system** (CCW) is periodically drained to allow for equipment inspection, maintenance or repair. This system uses demineralized water from the makeup plant as its source of makeup water along with a maximum of: 1200 ppm nitrite [from Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (from Betz AZ8101, Calgon LCS-60, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103. The infrequent drainings release approximately 60,000 gallons of treated water to the TRS per year.

- There are four Emergency Diesel Generators that are each cooled by an **Emergency Diesel Generator cooling jacket water system** (DJW), which employs chemical control for corrosion with a maximum of 2000 ppm nitrite [Calgon LCS 60 or Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole [Betz AZ8101, Calgon LCS-60, or equivalent]), 1000 ppm molybdate from Betz Corrshield MD 4103.

  This system is drained through the floor drains to the TRS when maintenance is performed. Each system volume is approximately 1000 gallons. Any system leaks would also be directed to the floor drain during normal operations.

- **Control Room Air Conditioning (CRAC)** drains: Approximately 1440 gallons/yr. of CRAC water is drained to the TRS. CRAC Water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (Calgon

LCS-60, Betz AZ8101, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103, and Betz Ferroquest FQ7101 and FQ7102 for CRAC HX cleaning. The system may be flushed with demineralized water, and when completed, corrosion control chemicals will be added back to the system. No additions of corrosion controlling chemicals are performed during the demineralized water flush.

- The **Essential Service Water systems** (ESW) and **Non-Essential Service Water systems** (NESW) are also periodically drained to allow for equipment inspection, maintenance, or repair. These drains may discharge Lake Michigan water used for non-contact cooling into the TRS. This water may be chlorinated for zebra mussel control. During some special treatment periods, this water may contain zebra mussel biocides, used as a molluscicide for zebra mussel control. Periodically, components of the ESW or NESW systems may be chemically cleaned to remove iron deposits using vendor supplied cleaning solution such as EDTA (ethylenediaminetetraacetic acid) or ascorbic acid, acetic acid and ammonia. These wastes could either be drained to the TRS or Lake Michigan via Outfall 001, 002, or 003.

- During wet lay-up, the **steam generators** are stored full of water with up to 400 ppm of hydrazine from Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) and 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) are added for corrosion control. The water may also contain up to 20 ppm boron. This water is normally drained to surface water via NPDES Outfalls 00A or 00B, but may be drained to the TRS in some instances. Drain volume will be approximately 32,000 gallons for each of the unit's four steam generators.

- The **Miscellaneous Drain Tanks** can be aligned to discharge to the TRS. As much as 350,000 gallons per day per unit may be directed to the TRS to control the chemistry limitations on the secondary water systems. Water chemistry is primarily the same as in the steam generators. This type of batch drain occurs in concert with condensate flushing activities, or it may occur during normal operation to adjust system chemistry. The overboarded water is normal secondary water. It may contain a mixture of ethanolamine, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], or carbohydrazide (NALCO 1250 plus, or equivalent). Maximum flows may approach 240 GPM as makeup plant water supplies can deliver.

- **Condensate flushes** are performed periodically to clean up the plant's secondary system prior to startup, and can be discharged to the TRS. Water containing up to 4 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboard to the TRS as required to remove contaminants. This flow rate averages 70 GPM, but may reach 600 GPM for short periods of time. The flow rate is dependent on water demands in the plant. Maximum output from the MUP is approximately 600 GPM.

- Around the plant, **miscellaneous sumps** collect an estimated 45,000 GPD of water from various equipment drains (ESW pipe tunnel sump). **Water and condensate leaks from valves and pumps** (Circulating Water condenser pit sumps, ESW pipe tunnel sump, heater drain pump room sump, screen wash pump room sump, acid and caustic room sumps, elevator pit sumps, screenhouse electrical equipment enclosure sump) will also be drained to the TRS. **Steam jet air ejector drains** also are directed to the heater drain pump room sump prior to pumping to the TRS. Betz FerroQuest FQ LP 7200 may be added to this sump to prevent scale buildup.

- **Miscellaneous floor drains** are located throughout the plant to provide a safe working environment by routing spilled or leaked water to the TRS. The major chemical influx into these drains is from general floor cleaning products used to maintain the floors. Also routed to the TRS through the floor drains are fire protection water, chlorinated Lake Township water, drinking water, cooling water (ESW/NESW), and drains from bioboxes used to monitor the zebra mussel control measures and other chemical control monitors. The bioboxes will discharge chlorine and zebra mussel biocides during periods when the Service Water Systems are treated with previously mention biological control agents.

- **Chemical feed tank drains** (drains are limited to emergencies only). There are eight chemical feed tanks that are approximately 200 gallons each that contain hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] at approximately 2%, ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), at approximately 5%, carbohydrazide (NALCO 1250 plus, or equivalent), approximately 2%. Normal process will be to collect these tank volumes to be reused whenever possible.

- **Chemical cleaning tank drains:** During refueling and maintenance outages, the chemical cleaning tank, and or temporary tanks may be used to mix borax (sodium tetraborate @ approximately 2000 ppm as boron) solutions for ice making operations. Small portions of the system may be drained to the TRS. In the unlikely event that a full tank is drained, approximately 3500 gallons will be directed to the TRS.

- **Non-radiological chemical lab** sink and floor drains are routed to the TRS for disposal. The drains carry water and the wastes generated while performing analyses and preparing laboratory standard including those on the attached list. Also discharged will be glassware cleaning and normal laboratory cleaning wastes. The average volume directed to the TRS is estimated to be 500 -1000 GPD.

- **Secondary sample water** from continuous analyzers are routed to drains which discharge to the TRS and/or the miscellaneous drain tank. The analyzers are on the cycles that may contain as much as 150 ppb hydrazine from either a direct feed or (as a breakdown product of carbohydrazide, and 2.5 ppm ethanolamine). The analyzers measure corrosion transport at an average flow of 1440 gallons per day when in operation.

- **Miscellaneous sealing and cooling water (MSCW)** supplies cooling and sealing water to the TRS pumps, Condensate Booster Pumps, Circulating Water Pumps, Vacuum Priming Pumps, Drain Seal Reservoir Tanks, MSCW pump sealing water, screen wash pumps sealing water, and Drain Sample Coolers. The flow per day may reach approximately 576,000 gallons; this water is filtered and chlorinated Lake Michigan water .

- Non-essential service water supplies approximately 53,000 GPD of non-contact cooling water to various **sample coolers** throughout the plant's turbine building.

- Chemical spills that enter the TRS may be neutralized within the sump to prevent a discharge to the environment. The potential for spills to the TRS exists for the following chemicals with the proposed neutralizers listed:

Chemical	Associated Neutralizer
Sulfuric acid	Sodium hydroxide
Sodium hydroxide	Sulfuric acid
Sodium hypochlorite	Sodium thiosulfate
Hydrazine	NESW (lake water), Hydrogen peroxide, sodium hypochlorite.
Ethanolamine	Sodium Hypochlorite, Hydrogen Peroxide, or ozone.
Ethylene glycol	Hydrogen peroxide

Reduction of hydrazine and ETA prior to discharge to the absorption pond may include additions of chemicals such as sodium hypochlorite, hydrogen peroxide, or ozone to the Turbine Room Sump in batches, or to the discharge piping as continuous treatment. A downstream treatment system provided by a vendor may be used to break down the hydrazine and ETA.

ADDITIONAL CHEMICAL LAB ANALYSES

Additional Information
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Plant Chemistry Lab (To Outfall 00H/00D)

Laboratory sink drains from the 633' Turbine lab are directed to the 90,000 gallon Turbine Room Sump. The sump contents are normally directed to the groundwater discharge (outfall 00D). Occasionally the Emergency by-pass may be utilized and the sump's contents will be discharged to the surface water discharge (outfall 00H). The following analyses are performed in the lab. Laboratory wastes from the analyses are discarded in the sink.

Parameter	Analysis Method
Nitrite	HACH DR-2000 Method 373, HACH DR 2010 Method 373
Hydrazine	ASTM D-1385 -88
Oil and Grease	EPA-600-4-79-020 Method 413.1
pH	Standard Methods for the examination of Water and Wastewater, ASTM-1293
Total Phosphorus	EPA-600-4-79-020 Method 365.3
Sulfate	EPA-600-4-79-020 Method 375.4
Total Residual Chlorine	EPA-600-4-79-020 Method 330.5
Ethanolamine (ETA)	Betz Standard Operating Procedure. (Betz proprietary Method adapted from HACH Dr-2000 1,2- Naphthoquinone-4-sulfonic acid Method.)
ICP Metals	Standard Methods for Examination of water and wastewater - 17th ed. 1989, 3120B.
Tolyltriazole	HACH DR-2000 Method 730
Carbohydrazide	HACH DR-2000 Method 732 HACH DR-2010 Method 182
N,N Diethylhyroxylamine (DEHA)	HACH DR-2010 Method 182
Silica	ASTM D 859-88

GROUNDWATER DISCHARGES

OUTFALL 00D - Turbine Room Sump

Utility wastewater from within the plant is discharged via the turbine room sump (TRS) into an on-site absorption pond (Outfall 00D). The normal disposition of these wastewaters is to an on-site absorption pond, which eventually vents via groundwater to Lake Michigan. In the unlikely event that the normal flow path to the absorption pond is not available, the overflow line (Outfall 00H) will direct the TRS flow to the plant's intake forebay. The wastewaters associated with this Outfall include:

Wastes from the makeup water treatment system.

- **NESW**: (144,000 GPD) The main contributor to this waste stream is the degassifier pump seal water. Non-Essential Service Water (NESW) from Lake Michigan supplies the vacuum degassifier pumps which utilize up to 100 GPM to remove non-condensable gases (primarily carbon dioxide and oxygen) from the makeup plant water and exhausts them to the atmosphere.

- **Pre-filter backwash**: (Estimated 98,000 GPD) Six pre-filters are backwashed with Lake Michigan water to remove the suspended matter captured on the filter media. Alum solution (aluminum sulfate 0.5 lb. per gallon) is added to the pre-filter influent as a flocculent. The alum is added via a coagulant feed pump. Approximately 50 lb./day of alum is used in this process. The alum contained in the backwash is discharged in the form of insoluble aluminum hydroxide.

- **Carbon filter backwash**: (Estimated 42,000 GPD) Carbon filters are periodically backwashed with Lake Michigan water to the TRS. These filters primarily remove organics, chlorine and small amounts of iron.

- **Demineralizer regeneration:** (Estimated 50,000 gallons per regeneration) occurs 2-4 times per month when the RO is in service and more often when it is not in service. Dilute sulfuric acid and sodium hydroxide used by the system to regenerate the resin. Dilute sulfuric acid, sodium hydroxide, and contaminates from the demineralization process is discharged to the neutralization tank or TRS. The pH is then adjusted to between 5.5 and 9.0 with sulfuric acid, or sodium hydroxide prior to discharge.

- **MUP Neutralization Tank** provides a place for demineralization regeneration wastes, and Reverse Osmosis Unit cleaning flushes to be neutralized prior to being discharged to the TRS and ultimately the absorption pond. When the MUP resin beds are regenerated, up to 50,000 gallons of regeneration chemicals, and backwash waters are processed in the neutralization tank. The Reverse Osmosis cleaning flushes average approximately 5,000 gallons per event. When the water is neutralized, it is pumped to the TRS via a 2,000 GPM neutralization waste pump.

- The **Retention Tank** is periodically blown down, discharging small volumes of solid material removed by settling. The retention tank contains a mixture of Lake Township water and filtered Lake Michigan water waiting further processing by the Makeup Plant.

- **The Reverse Osmosis System (RO) Cleaning**. Normal reject water flow is to Lake Michigan via Outfall 00G. The RO system must maintain very clean membranes to assure efficient operation and purity of water. Several methods are used to maintain this level of cleanliness from scale and biofouling. Hydrochloric acid or sulfuric acid is fed at approximately 1.3 GPH continually when the RO is in service to lower the pH to reduce the scaling tendencies of the water. The reject water from the RO unit consists of concentrated Lake Michigan water and a small amount of acid that inhibits scale buildup in the membranes.

  Approximately once per month, a flush is performed using approximately 1,000 gallons of a nominal 0.05% hydrochloric acid solution. This is followed with approximately 1,000 gallons of a nominal 0.1% sodium hydroxide solution. This flush will dissolve any scale that deposits on the membranes. The total amount of flushing solution will average approximately 5,000 gallons per event. Sodium bisulfite is used to preserve the membranes during long-term shutdown periods. Approximately 15 lbs. of sodium bisulfite per year is used in this manner.

  The chemical cleaning involves several steps and may contain citric acid, hydrochloric acid, phosphoric acid, sodium hydroxide, and a neutral pH detergent. The periodic cleaning process averages approximately 10,000 gallons per event, diverted either to the Turbine Room Sump (Outfall 00H), through the Neutralization Tank to the Turbine Room Sump (Outfall 00H), or to the Circulating Water Forebay (Outfall 001, 002, or 003).

Waste from miscellaneous processes.

- During periods when not in operation, the **heating boiler** may be stored full of treated boiler water containing at most 400 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and/or 50 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for corrosion protection. Prior to use, this "wet lay-up" water is drained to the TRS. The volume drained is approximately 600 gallons.

- The Circulating Water System cooling water contained in the **condensers** during shutdowns are periodically drained to the TRS. (Six condenser halves and 2 feedpump condensers, approximately 37,000 gallons of lake water per half).

- The **Component Cooling Water system** (CCW) is periodically drained to allow for equipment inspection, maintenance or repair. This system uses demineralized water from the makeup plant as its source of makeup water along with a maximum of: 1200 ppm nitrite [from Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (from Betz AZ8101, Calgon LCS-60, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103. The infrequent drainings release approximately 60,000 gallons of treated water to the TRS per year.

- There are four Emergency Diesel Generators that are each cooled by an **Emergency Diesel Generator cooling jacket water system** (DJW), which employs chemical control for corrosion with a maximum of 2000 ppm nitrite [Calgon LCS 60 or Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole [Betz AZ8101, Calgon LCS-60, or equivalent]), 1000 ppm molybdate from Betz Corrshield MD 4103.

  This system is drained through the floor drains to the TRS when maintenance is performed. Each system volume is approximately 1000 gallons. Any system leaks would also be directed to the floor drain during normal operations.

- **Control Room Air Conditioning (CRAC)** drains: Approximately 1440 gallons/yr. of CRAC water is drained to the TRS. CRAC Water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (Calgon LCS-60, Betz AZ8101, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103, and Betz Ferroquest FQ7101 and FQ7102 for CRAC HX cleaning. The system may be flushed with demineralized water, and when completed, corrosion control chemicals will be added back to the system. No additions of corrosion controlling chemicals are performed during the demineralized water flush.

- The **Essential Service Water systems** (ESW) and **Non-Essential Service Water systems** (NESW) are also periodically drained to allow for equipment inspection, maintenance, or repair. These drains may discharge Lake Michigan water used for non-contact cooling into the TRS. This water may be chlorinated for zebra mussel control. During some special treatment periods, this water may contain zebra mussel biocides, used as a molluscicide for zebra mussel control. Periodically, components of the ESW or NESW systems may be chemically cleaned to remove iron deposits using vendor supplied cleaning solution such as EDTA (ethylenediaminetetraacetic acid) or ascorbic acid, acetic acid and ammonia. These wastes could either be drained to the TRS or Lake Michigan via Outfall 001, 002, or 003.

- During wet lay-up, the **steam generators** are stored full of water with up to 400 ppm of hydrazine from Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) and 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) are added for corrosion control. The water may also contain up to 20 ppm boron. This water is normally drained to surface water via NPDES Outfalls 00A or 00B, but may be drained to the TRS in some instances. Drain volume will be approximately 32,000 gallons for each of the unit's four steam generators.

- The **Miscellaneous Drain Tanks** can be aligned to discharge to the TRS. As much as 350,000 gallons per day per unit may be directed to the TRS to control the chemistry limitations on the secondary water systems. Water chemistry is primarily the same as in the steam generators. This type of batch drain occurs in concert with condensate flushing activities, or it may occur during normal operation to adjust system chemistry. The overboarded water is normal secondary water. It

may contain a mixture of ethanolamine, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], or carbohydrazide (NALCO 1250 plus, or equivalent). Maximum flows may approach 240 GPM as makeup plant water supplies can deliver.

- **Condensate flushes** are performed periodically to clean up the plant's secondary system prior to startup, and can be discharged to the TRS. Water containing up to 4 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboard to the TRS as required to remove contaminants. This flow rate averages 70 GPM, but may reach 600 GPM for short periods of time. The flow rate is dependent on water demands in the plant. Maximum output from the MUP is approximately 600 GPM.

- Around the plant, **miscellaneous sumps** collect an estimated 45,000 GPD of water from various equipment drains (ESW pipe tunnel sump). **Water and condensate leaks from valves and pumps** (Circulating Water condenser pit sumps, ESW pipe tunnel sump, heater drain pump room sump, screen wash pump room sump, acid and caustic room sumps, elevator pit sumps, screenhouse electrical equipment enclosure sump) will also be drained to the TRS. **Steam jet air ejector drains** also are directed to the heater drain pump room sump prior to pumping to the TRS. Betz FerroQuest FQ LP 7200 may be added to this sump to prevent scale buildup.

- **Miscellaneous floor drains** are located throughout the plant to provide a safe working environment by routing spilled or leaked water to the TRS. The major chemical influx into these drains is from general floor cleaning products used to maintain the floors. Also routed to the TRS through the floor drains are fire protection water, chlorinated Lake Township water, drinking water, cooling water (ESW/NESW), and drains from bioboxes used to monitor the zebra mussel control measures and other chemical control monitors. The bioboxes will discharge chlorine and zebra mussel biocides during periods when the Service Water Systems are treated with previously mention biological control agents.

- **Chemical feed tank drains** (drains are limited to emergencies only). There are eight chemical feed tanks that are approximately 200 gallons each that contain hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] at approximately 2%, ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), at approximately 5%, carbohydrazide (NALCO 1250 plus, or

equivalent), approximately 2%. Normal process will be to collect these tank volumes to be reused whenever possible.

- **Chemical cleaning tank drains:** During refueling and maintenance outages, the chemical cleaning tank, and or temporary tanks may be used to mix borax (sodium tetraborate @ approximately 2000 ppm as boron) solutions for ice making operations. Small portions of the system may be drained to the TRS. In the unlikely event that a full tank is drained, approximately 3500 gallons will be directed to the TRS.

- **Non-radiological chemical lab** sink and floor drains are routed to the TRS for disposal. The drains carry water and the wastes generated while performing analyses and preparing laboratory standards including those on the attached list. Also discharged will be glassware cleaning and normal laboratory cleaning wastes. The average volume directed to the TRS is estimated to be 500 -1000 GPD.

- **Secondary sample water** from continuous analyzers are routed to drains which discharge to the TRS and/or the miscellaneous drain tank. The analyzers are on the cycles that may contain as much as 150 ppb hydrazine from either a direct feed or (as a breakdown product of carbohydrazide, and 2.5 ppm ethanolamine). The analyzers measure corrosion transport at an average flow of 1440 gallons per day when in operation.

- **Miscellaneous sealing and cooling water (MSCW)** supplies cooling and sealing water to the TRS pumps, Condensate Booster Pumps, Circulating Water Pumps, Vacuum Priming Pumps, Drain Seal Reservoir Tanks, MSCW pump sealing water, screen wash pumps sealing water, and Drain Sample Coolers. The flow per day may reach approximately 576,000 gallons; this water is filtered and chlorinated Lake Michigan water .

- Non-essential service water supplies approximately 53,000 GPD of non-contact cooling water to various **sample coolers** throughout the plant's turbine building.

- Chemical spills that enter the TRS may be neutralized within the sump to prevent a discharge to the environment. The potential for spills to the TRS exists for the following chemicals with the proposed neutralizers listed:

Chemical	Associated Neutralizer
Sulfuric acid	Sodium hydroxide
Sodium hydroxide	Sulfuric acid
Sodium hypochlorite	Sodium thiosulfate
Hydrazine	NESW (lake water), Hydrogen peroxide, sodium hypochlorite.
Ethanolamine	Sodium Hypochlorite, Hydrogen Peroxide, or ozone.
Ethylene glycol	Hydrogen peroxide

Reduction of hydrazine and ETA prior to discharge to the absorption pond may include additions of chemicals such as sodium hypochlorite, hydrogen peroxide, or ozone to the Turbine Room Sump in batches, or to the discharge piping as continuous treatment. A downstream treatment system provided by a vendor may be used to break down the hydrazine and ETA.

ADDITIONAL CHEMICAL LAB ANALYSES

Additional Information
Section I
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Donald C. Cook Nuclear Plant
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Plant Chemistry Lab (To Outfall 00H/00D)

Laboratory sink drains from the 633' Turbine lab are directed to the 90,000 gallon Turbine Room Sump. The sump contents are normally directed to the groundwater discharge (outfall 00D). Occasionally the Emergency by-pass may be utilized and the sump's contents will be discharged to the surface water discharge (outfall 00H). The following analyses are performed in the lab. Laboratory wastes from the analyses are discarded in the sink.

Parameter	Analysis Method
Nitrite	HACH DR-2000 Method 373, HACH DR 2010 Method 373
Hydrazine	ASTM D-1385 -88
Oil and Grease	EPA-600-4-79-020 Method 413.1
pH	Standard Methods for the examination of Water and Wastewater, ASTM-1293
Total Phosphorus	EPA-600-4-79-020 Method 365.3
Sulfate	EPA-600-4-79-020 Method 375.4
Total Residual Chlorine	EPA-600-4-79-020 Method 330.5
Ethanolamine (ETA)	Betz Standard Operating Procedure. (Betz proprietary Method adapted from HACH Dr-2000 1,2- Naphthoquinone-4-sulfonic acid Method).
ICP Metals	Standard Methods for Examination of water and wastewater - 17th ed. 1989, 3120B.
Tolyltriazole	HACH DR-2000 Method 730
Carbohydrazide	HACH DR-2000 Method 732 HACH DR-2010 Method 182
N,N Diethylhyroxylamine (DEHA)	HACH DR-2010 Method 182
Silica	ASTM D 859-88

<u>OUTFALL 00E – Sanitary Waste Discharges</u>

The system operates at a designed flow of 50,000 GPD with a maximum flow capacity of 60,000 GPD. The Sequencing Batch Reactor (SBR) system treats the wastewater and discharges to an effluent tank where it can be filtered prior to discharge to one of two seepage lagoons. The lagoons discharge into the groundwater with the ultimate disposition venting to Lake Michigan. The sludge removed from the digester tank basins is taken to a local POTW (public owned treatment works) for disposal or dewatered and stored as low level radioactive waste, and disposed of as appropriate.

To aid in the settling process, flocculents such as ferric chloride, pH controllers such as magnesium hydroxide, or polymers (such as Axchem AF4500) are added to the process. To selectively enhance biosolids, bioaugmentation nutrients (such as Bioprime Dosfolat) are added to the process. This is a nutrient that encourages the growth of beneficial microbes in the activated sludge. Sodium hypochlorite is added in small amounts to the process to control filamentous bacteria growth if needed. Sodium hypochlorite and detergent are also added to the sand filters to clean them periodically. These are then backwashed into the equalization basin to be reprocessed by the SBR treatment process.

Plant sanitary waste consists of shower and rest room facilities, and janitor washbasins located throughout the Plant's non-radiological property. Kitchen wastes are generated from the plant cafeteria, the Cook Energy Information Center and Training buildings.

The chemistry training laboratory discharges to the sewage treatment plants through a limestone bed neutralization tank. The chemistry lab is used to train technicians on analyses performed in the plant. The discharge from the lab carries water and wastes generated while performing analyses and preparing laboratory standards including those on the attached list. The training building HVAC system also drains through the limestone bed.

The wastewater treatment plant laboratory discharges to the sewage treatment plants. The discharge from the lab carries water and wastes generated from performing analyses and preparing laboratory standards used for compliance monitoring of the sewage treatment plant under groundwater discharge permit GW1810102.

Portable toilet wastes on the plant site may be collected and discharged to the sewage treatment plants. A biodegradable deodorant is used in the portable toilets. Sludge effluent waste may also be recycled through the plants to decrease the amount of sludge for processing when possible.

Miscellaneous rinsing of waste receptacles and possible cleaning operations waste, utilizing various detergents, may be rinsed to the sewage treatment plants.

Rule 323.2218
Discharge permits
Part 4 Treatment Codes

Turbine Room Sump Outfall 00D

The Turbine Room Sump (TRS) provides commingling wastes for neutralization and discharge to Outfall 00D. An on-line pH controller and isolation valve ensures that the effluent discharge is within permit limits for pH (B1b). Dilute acid or caustic is added to the wastewater to achieve a pH level required for discharge. The effluent is discharged to an on-site absorption pond, where it percolates into the ground (A-1f). Non contact cooling water, air compressor condensate also discharges to the TRS. Flow measurement, visual observation and sampling is required under the current permit.

- **MUP Neutralization Tank** provides a place for demineralization regeneration wastes, and Reverse Osmosis Unit cleaning flushes to be neutralized prior to being discharged to the TRS and ultimately the absorption pond. When the MUP resin beds are regenerated, up to 50,000 gallons of regeneration chemicals, and backwash waters are processed in the neutralization tank. The Reverse Osmosis cleaning flushes average approximately 5,000 gallons per event. When the water is neutralized, it is pumped to the TRS via a 2,000 GPM neutralization waste pump.
- **Demineralizer regeneration:** (Estimated 50,000 gallons per regeneration) occurs 2-4 times per month when the RO is in service and more often when it is not in service. Dilute sulfuric acid and sodium hydroxide are used by the system to regenerate the resin. Dilute sulfuric acid, sodium hydroxide, and contaminates from the demineralization process are discharged to the neutralization tank or TRS. The pH is then adjusted to between 5.5 and 9.0 with sulfuric acid, or sodium hydroxide prior to discharge.
- Chemical spills that enter the TRS may be neutralized within the sump to prevent a discharge to the environment. The potential for spills to the TRS exists for the following chemicals with the proposed neutralizers listed:

Chemical	Associated Neutralizer
Sulfuric acid	Sodium hydroxide
Sodium hydroxide	Sulfuric acid
Sodium hypochlorite	Sodium thiosulfate
Hydrazine/Carbohydrazide	NESW (lake water), Hydrogen peroxide, sodium hypochlorite.
Ethanolamine	Sodium Hypochlorite, Hydrogen Peroxide, or ozone.
Ethylene glycol	Hydrogen peroxide

Reduction of hydrazine and ETA prior to discharge to the absorption pond may include additions of chemicals such as sodium hypochlorite, hydrogen peroxide, or ozone to the Turbine Room Sump in batches, or to the discharge piping as continuous treatment. A downstream treatment system provided by a vendor may be used to break down the hydrazine and ETA.

OUTFALL 00E – Sanitary Waste Discharges

The sequencing batch reactor is maintained by licensed operators under contract to Indiana Michigan Power. The contract manager is also a licensed wastewater operator. The system operates at a designed flow of 50,000 GPD with a maximum flow capacity of 60,000 GPD. The Sequencing Batch Reactor (SBR) system treats the wastewater using the activated sludge process (C-3a and C-3b). The treated effluent discharges to an effluent tank where it can be filtered (A-2b) prior to discharge to one of two seepage lagoons (A-1f). The lagoons discharge into the groundwater with the ultimate disposition venting to Lake Michigan. The sludge removed from the digester tank basins is taken to a local POTW (public owned treatment works) for disposal or dewatered and disposed as low level radioactive waste.

To aid in the settling process, flocculents such as ferric chloride, pH controllers such as magnesium hydroxide, or polymers (such as Axchem AF4500) are added to the process. To selectively enhance biosolids, bioaugmentation nutrients (such as Bioprime Dosfolat) are added to the process. This is a nutrient that encourages the growth of beneficial microbes in the activated sludge. Sodium hypochlorite is added in small amounts to the process to control filamentous bacteria growth if needed. Sodium hypochlorite and detergent are also added to the sand filters to clean them periodically. These are then backwashed into the equalization basin to be reprocessed by the SBR treatment process.

Compliance with rule 2222:

These plant discharges meet the requirement of R323.2222.2.ii by complying with the effluent standards of part 2222, groundwater standards of part 2222, or both. A single exception exists for iron concentration in monitoring well EW13 where iron fouling bacteria are naturally present in the groundwater. Plant effluent is in compliance with the groundwater standard for iron, but naturally occurring iron bacteria shows up in one of the monitoring wells. Upgradient monitoring well EW-8 monitoring history shows Mercury levels at 0.0035 ug/l. The remaining monitoring wells are below the 0.0013 ug/l limit. This is not a permit exceedence since there are no limits on upgradient wells.

History of CNP's Compliance with Effluent and Groundwater Permit Limits and Sampling Frequency.

Cook Nuclear Plant's groundwater discharges are in compliance with the effluent limits established in the Groundwater Permit M00988 and GW1810102. There were a few problems dealing with sample contamination in Method 1631 (low level mercury) in the first round of monitoring which resulted in high levels of mercury being detected, but these problems did not repeat in subsequent sampling. In general, concentrations of pollutants in the groundwater are far below the effluent limits and there is no indication that the concentrations of pollutants are trending upward. There are only seven parameters that have had 1 or 2 monitoring events exceeding groundwater effluent limits (total inorganic nitrogen, nitrite, phosphorus, sulfate, mercury, selenium, and silver). Background wells EW-8 and EW-16 show a similar trend for these parameters, indicating that the natural groundwater has a potential for exceeding the effluent limits and influencing the monitoring wells.

The history of Cook Nuclear Plants groundwater compliance is discussed in greater detail in the following sections:

1. Assessment of the Monitoring data for the Turbine Room Sump Discharge (Outfall 00D) 3

2. Assessment of the Monitoring data for the Sanitary Wastewater (Sequencing Batch Reactor) Discharge (Outfall 00E) 4

3. Assessment of the Groundwater Monitoring Data (Wells EW-1A, EW-12, EW-13, EW-19, and Background Wells EW-8 and EW-16). 5
- Total Inorganic Nitrogen (TIN) 6
- Nitrite 6
- Phosphorus 6
- Sulfate 6
- Mercury 6
- Selenium 7
- Silver 7

The observations made are based on a review of the monitoring data for the years 2000 through July 2008. Monitoring data determined to be less than the Method Detection Limit (MDL) were treated as ½ the MDL for statistical calculations. (ref USEPA SW846)

The Turbine Room Sump and Sanitary Sewage discharges are regulated by Part A of the permit as follows:

Part A Effluent Limitations and Monitoring Requirements				
Sample Location ID	**Parameter**	**Limitation – Units**	**Measurement Frequency**	**Sample Type**
Effluent Flow EF-1 Process Wastewater (Turbine Room Sump) (Outfall 00D)	Flow	2,400,000 gpd 876,000,000 gpy	Daily* Annually	Direct Measurement Calculation
Effluent Quality EQ-1 Process Wastewater (Turbine Room Sump) (Outfall 00D)	Chloride***	mg/l	Weekly	Grab
	Ethanolamine	mg/l	Weekdays	Grab
	Hydrazine	ug/l	Weekdays	Grab
	pH***	6.5 to 9.0 S.U.	Weekdays	Grab
	Total Inorganic Nitrogen	mg/l	Monthly	Calculation: Ammonia (N) + Nitrate (N) + Nitrite (N)
	Ammonia Nitrogen	mg/l	Monthly	Grab
	Nitrite Nitrogen	mg/l	Monthly	Grab
	Nitrate Nitrogen	mg/l	Monthly	Grab
	Sodium***	mg/l	Twice per month	Grab
	Sulfate***	mg/l	Twice per month	Grab
Effluent Flow EF-2 Sanitary Sewage Wastewater (Outfall 00E)	Flow	60,000 gpd 21,900,000 gpy	Daily* Annually	Direct Measurement Calculation
Effluent Quality EQ-2 Sanitary Sewage Wastewater (Outfall 00E))	BOD5	35 mg/l	Weekly	Grab
	Chloride***	mg/l	Weekly	Grab
	Dissolved Oxygen***	mg/l	Weekly	Grab
	Phosphorus	15 mg/l	Weekly	Grab
	pH***	6.5 to 9.0 S.U.	Weekly	Grab
	Sodium***	mg/l	Weekly	Grab
	Total Inorganic Nitrogen	mg/l daily max	Weekly	Grab
	Ammonia Nitrogen	mg/l	Weekly	Grab
	Nitrate Nitrogen	mg/l	Weekly	Grab

* The daily maximum is defined as the total discharge by weight, volume or concentration if specified, during any calendar day.
** 24 hour composite samples.
*** Refer to Section E., Item 1 Schedule of Activities

1. Assessment of the Monitoring data for the Turbine Room Sump Discharge (Outfall 00D)

Monitoring data for the Turbine Room Sump Discharge is summarized in Table 1. The TRS is designed with the discharge piping outlets/pumps at the bottom of the tank. This configuration will allow spilled oil to remain in the TRS to be recovered instead of being discharged to the environment. The sump has a working capacity of approximately 82,855 gallons.

The absorption pond receives the effluent from the TRS. A solar powered mixing pump recirculates the pond's contents to assure proper mixing and additional biological treatment.

There is no indication that the concentrations of pollutants are trending upward in the down gradient well, Well 12.

Flow is typically less than 0.76 MGD with an average of 0.42 MGD.

Chloride in the effluent ranged from 4.3 to 21.75 mg/l. The average discharge concentration was 10.86 mg/l and 90 % of all the observations are less than 13 mg/l.

Ethanolamine in the effluent ranged from 0.08 to 15.4 mg/l. The average discharge concentration was 0.7 mg/l and 90 % of all the observations are less than 1.46 mg/l.

Carbohydrazide is used as a replacement for hydrazine for safe handling reasons. The carbohydrazide converts to Hydrazine, carbon dioxide and nitrogen in the plant's steam cycle. Hydrazine in the effluent ranged from 0.35 to 3125 ug/l. The average discharge concentration was 54.83 ug/l and 90 % of all the observations are less than 30.15 ug/l.

The pH of the turbine room sump discharge is dependent upon the regeneration of the ion exchange resins. The cation resin is regenerated with sulfuric acid and the anion resin is regenerated with sodium hydroxide. The pH of the resultant mixture of spent regeneration solutions in the turbine room sump generally ranges from 6.3 to 8.9 S.U. [Prior to 2006, the pH effluent limit was 5.5 to 9.0 SU. Beginning June 2006 the limit was changed to 6.5 to 9.0. Therefore, the turbine room sump discharge was in compliance with the applicable effluent limit.] Sulfuric acid and sodium hydroxide are used to adjust pH prior to pumped transfer to the TRS or absorption pond.

Total Inorganic Nitrogen in the effluent ranged from 0.4 to 17.03 mg/l. The average discharge concentration was 4.46 mg/l and 90 % of all the observations are less than 6.03 mg/l.

Ammonia in the effluent ranged from 0.10 to 8.6 mg/l. The average discharge concentration was 3.52 mg/l and 90 % of all the observations are less than 5.26 mg/l.

Nitrate in the effluent ranged from 0.05 to 13.8 mg/l. The average discharge concentration was 0.89 mg/l and 90 % of all the observations are less than 0.58 mg/l.

Nitrite in the effluent ranged from 0.03 to 0.49 mg/l. The average discharge concentration was 0.06 mg/l and 90 % of all the observations are less than 0.10 mg/l.

Sodium in the discharge averaged 525 mg/l. The sodium discharge is the result of regenerating ion exchange resins. Both cation and anion resins are regenerated and the spent regeneration solutions neutralize each other in the turbine room sump, or in the neutralization tank. The treated effluent is controlled by an in line pH monitor that prevents discharges less than pH 6.3, and greater than pH 8.2 values. [After June 2006, these control limits were changed to 7.0 to 8.5 S.U. to comply with the new permit effluent limits.]

Sulfate in the discharge ranged from 9 to 8360 mg/l and averaged 695 mg/l. The sulfate discharge is the result of regenerating ion exchange resins. 90 percent of all the sulfate measurements were below 3055 mg/l.

2. Assessment of the Monitoring data for the Sanitary Wastewater (Sequencing Batch Reactor) Discharge (Outfall 00E)

Monitoring data for the sanitary wastewater discharge are summarized in Table 2.

The maximum flow through the sewage treatment plant was 43,360 gpd which is below the design flow of 60,000 gpd.

The permit effluent limit for BOD_5 is 35 mg/l. All measurements are in compliance with that limit. The maximum concentration of BOD_5 in the discharge was 15.04 mg/l and the monthly average concentration was 3.1 mg/l.

There is no permit effluent limit for chloride. Chloride concentrations in the discharge ranged from 95 to 161.4 mg/l. The monthly average concentration was 127.3 mg/l and 90% of all measurements were below 145.6 mg/l.

There is no permit effluent limit for Dissolved Oxygen. Dissolved Oxygen concentrations in the discharge ranged from 0.7 to 8.32 mg/l. The monthly average concentration was 2.9 mg/l and 90% of all measurements were below 5.1 mg/l.

The permit effluent limit for Total phosphorus is 15 mg/l. All measurements were in compliance with that limit. The maximum concentration of Total phosphorus in the discharge was 6.75 mg/l and the monthly average concentration was 1.3 mg/l.

The permit effluent limit for pH is 6.5 to 9.0 S.U. All measurements were in compliance with that limit. The pH of the discharge ranged from 6.58 to 7.6 S.U.

There is no permit effluent limit for Sodium. Sodium concentrations in the discharge ranged from 26.2 to 56.4 mg/l. The monthly average concentration was 38.2 mg/l and 90% of all measurements were below 48.6 mg/l.

There is no permit effluent limit for Total Inorganic Nitrogen (TIN). Total Inorganic Nitrogen (TIN) concentrations in the discharge ranged from 0 to 65.7 mg/l. The monthly average concentration was 16.1 mg/l and 90% of all measurements were below 46.8 mg/l.

There is no permit effluent limit for ammonia nitrogen. Ammonia nitrogen concentrations in the discharge ranged from 0.01 to 47.7 mg/l. The monthly average concentration was 2.5 mg/l and 90% of all measurements were below 8.2 mg/l.

There is no permit effluent limit for Nitrate nitrogen. Nitrate nitrogen concentrations in the discharge ranged from 0.5 to 60.6 mg/l. The monthly average concentration was 16.8 mg/l and 90% of all measurements were below 35.2 mg/l.

3. Assessment of the Groundwater Monitoring Data (Wells EW-1A, EW-12, EW-13, EW-19, and Background Wells EW-8 and EW-16).

Groundwater is regulated by Part B of the permit as follows (limitations are for Wells EW-1A, EW-12, EW-13, EW-19):

Parameters	Concentration Limitations	Frequency Of Analysis	Sample Type
Static Water Elevation	USGS-F	Quarterly	Direct Measurement
pH	6.0 to 9.0 S.U.	Quarterly	Grab
Chloride	250 mg/l	Quarterly	Grab
Specific Conductance	umhos/cm	Quarterly	Grab
Total Inorganic Nitrogen*	5 mg/l	Quarterly	* Calculation: Ammonia (N) + Nitrate (N) + Nitrite (N)
Ammonia Nitrogen	mg/l	Quarterly	Grab
Nitrite Nitrogen	0.5 mg/l	Quarterly	Grab
Nitrate Nitrogen	mg/l	Quarterly	Grab
Total Phosphorus	1 mg/l	Quarterly	Grab
Sulfate	250 mg/l	Quarterly	Grab
Dissolved Sodium	120 mg/l	Quarterly	Grab
Total Dissolved Solids	mg/l	Quarterly	Grab
Total Alkalinity	mg/l	Annually	Grab
Bicarbonate	mg/l	Annually	Grab
Dissolved Calcium	mg/l	Annually	Grab
Dissolved Iron	mg/l	Annually	Grab
Dissolved Magnesium	200 mg/l	Annually	Grab
Dissolved Oxygen	mg/l	Annually	Grab
Dissolved Potassium	mg/l	Annually	Grab
Total Organic Carbon (TOC)	mg/l	Annually	Grab
Phenols	mg/l	Annually	Grab
Ethanolamine	2 mg/l	Annually	Grab
Dissolved Aluminum	150 ug/l	Annually	Grab
Dissolved Barium	440 ug/l	Annually	Grab
Dissolved Boron	1900 ug/l	Annually	Grab
Dissolved Cadmium	2.2 ug/l	Annually	Grab
Dissolved Chromium	11 ug/l	Annually	Grab
Dissolved Copper	9 ug/l	Annually	Grab
Dissolved Lead	10 ug/l	Annually	Grab
Dissolved Manganese	530 ug/l	Annually	Grab
Dissolved Inorganic Mercury	0.0013 ug/l	Annually	Grab
Dissolved Nickel	52 ug/l	Annually	Grab
Dissolved Selenium	5 ug/l	Annually	Grab
Dissolved Silver	0.2 ug/l	Annually	Grab
Dissolved Zinc	120 ug/l	Annually	Grab
Hydrazine	10 ug/l	Annually	Grab

The groundwater monitoring data is summarized in Tables 3 through 38.

In general, the concentration of chemical constituents in the groundwater is far below the groundwater limitations (in many cases by more than one order of magnitude). There are only seven parameters that have had 1 or 2 monitoring events exceeding groundwater effluent limits (total inorganic nitrogen, nitrite, phosphorus, sulfate, mercury, selenium, and silver). Background wells EW-8 and EW-16 show a similar trend for these parameters, indicating that the natural groundwater has a potential for exceeding the effluent limits and influencing the monitoring wells. Therefore, only the exceptions are discussed.

See Figure 1 for the location of Wells EW-1A, EW-12, EW-13, and EW-19.

Total Inorganic Nitrogen (TIN)

The concentration limit for TIN specified in the CNP permit is 5 mg/l. Only 1 out of 181 measurements exceeded the limit. This measurement was made on 4/18/2005 at Well 1A which is the well closest to the absorption pond. The well was resampled on 5/23/05 with the result being 3.17 mg/l suggesting a possible laboratory error. The average concentration of TIN at Well EW-1A is 2.8 mg/l. There is no upward trend in the data for any of the wells.

Nitrite

The concentration limit for Nitrite specified in the CNP permit is 0.5 mg/l. Only 1 out of 195 measurements exceeded the limit. This measurement was made on 1/16/2001 at Well 8 which is the background well. Prior to June 2006 there were no Nitrite effluent limits, therefore, there was no compliance issue. The average concentration of Nitrite at Well 8 is 0.04 mg/l. The next highest concentration of Nitrite measured was 0.24 mg/l, less than half the limit. There is no upward trend in the data for any of the wells.

Phosphorus

The concentration limit for Phosphorus specified in the CNP permit is 1 mg/l. Only 1 out of 220 measurements exceeded the limit. This measurement was made on 10/17/2005 at Well 1A which is the well closest to the absorption pond. This measurement was a laboratory error. Reanalysis of the same sample showed that the sample was in compliance (i.e., < 0.01). The average concentration of Phosphorus at Well 1A is 0.09 mg/l. There is no upward trend in the data for any of the wells.

Sulfate

The concentration limit for Sulfate specified in the CNP permit is 250 mg/l. Only 2 out of 209 measurements exceeded the limit. These measurements were made at Well 11 on 2/15/2000 and Well 13 on 7/24/2002. Prior to June 2006 there were no sulfate effluent limits, therefore there was no compliance issue. The average concentration of Sulfate at all compliance monitoring wells ranges from 32 to 128 mg/l. There is no upward trend in the data for any of the wells.

Mercury

Data from the CNP compliance monitoring wells show that groundwater in the vicinity of Cook Nuclear Plant occasionally exceeds the mercury effluent limit (0.0013 ug/l). Whenever CNP receives an analysis showing a high concentration of mercury, plant personnel immediately resample to confirm the result. The confirmation samples show that mercury is in compliance with the effluent limit. Part of the problem may be the sensitivity of the low level mercury procedure, Method 1631.

Nearly all of the data taken at the background well EW-8 exceed the groundwater standard. In response to a request from MDEQ, CNP began monitoring well EW-16 as the background well beginning in 2006. Well EW-16 also shows mercury concentrations exceeding the groundwater standard up gradient of the CNP discharge and compliance monitoring wells. There is no known source of mercury from any plant processes in the vicinity of well EW-16.

Selenium

The concentration limit for Selenium specified in the CNP permit is 5 ug/l. Only 1 out of 78 measurements exceeded the limit. This measurement was made on 7/24/2002 at Well 8 which is the background well. Selenium is generally less that the method detection limit (MDL). However, during the sampling event on 7/24/2002, three other wells showed measurable concentrations of selenium. This unusual event has not repeated and there is no upward trend in the selenium data for any of the wells, therefore, selenium should not be a concern.

Silver

The concentration limit for Silver specified in the CNP permit is 0.2 ug/l. Only 1 out of 73 measurements since August 1, 2000 exceeded the limit. Silver is nearly always less that the method detection limit (MDL). Since the MDL is very close to the groundwater standard, results of the statistical analysis indicate a potential to exceed the standard. However, because silver is generally less than detectable and there is no upward trend, silver should not be a concern.

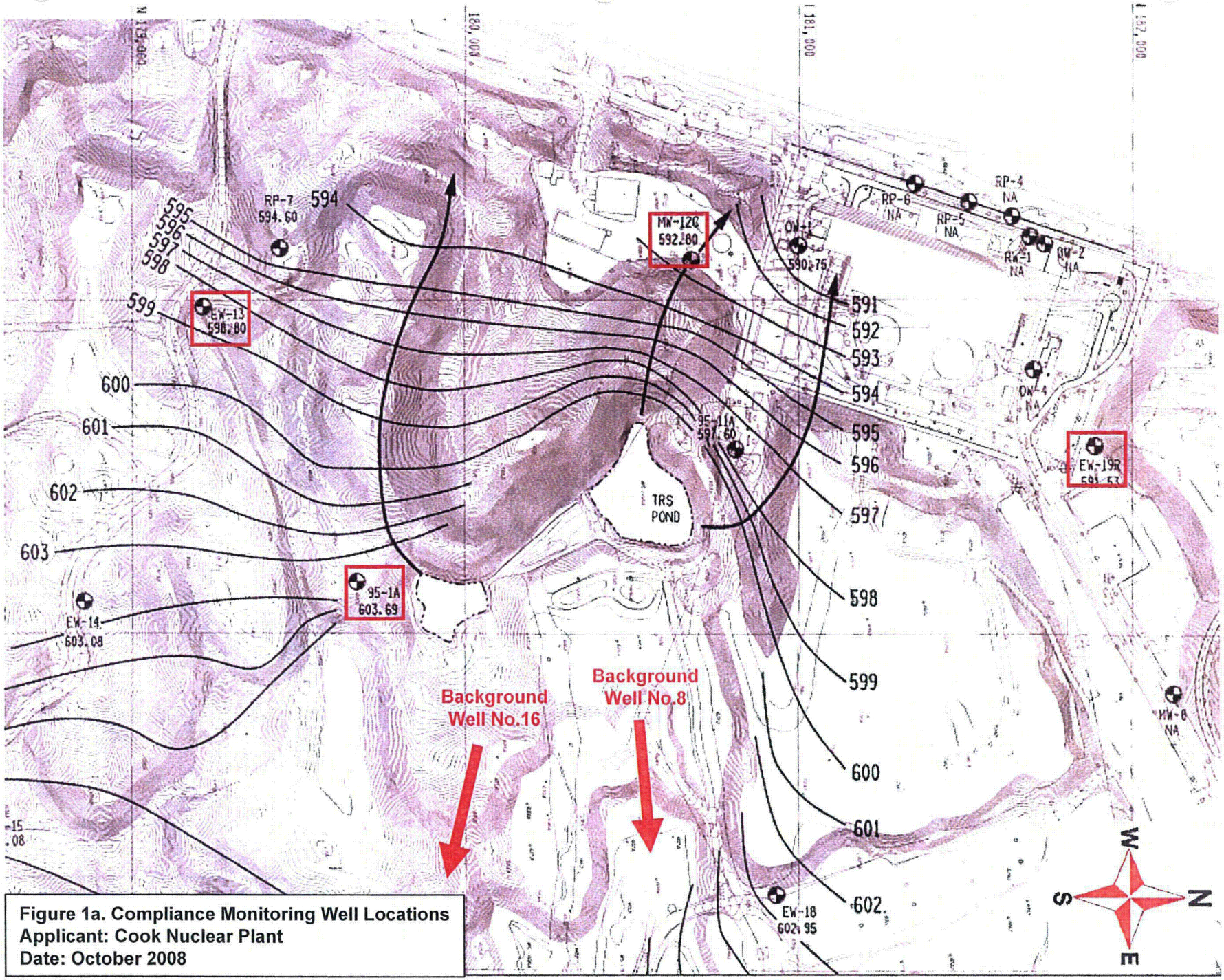

Figure 1a. Compliance Monitoring Well Locations
Applicant: Cook Nuclear Plant
Date: October 2008

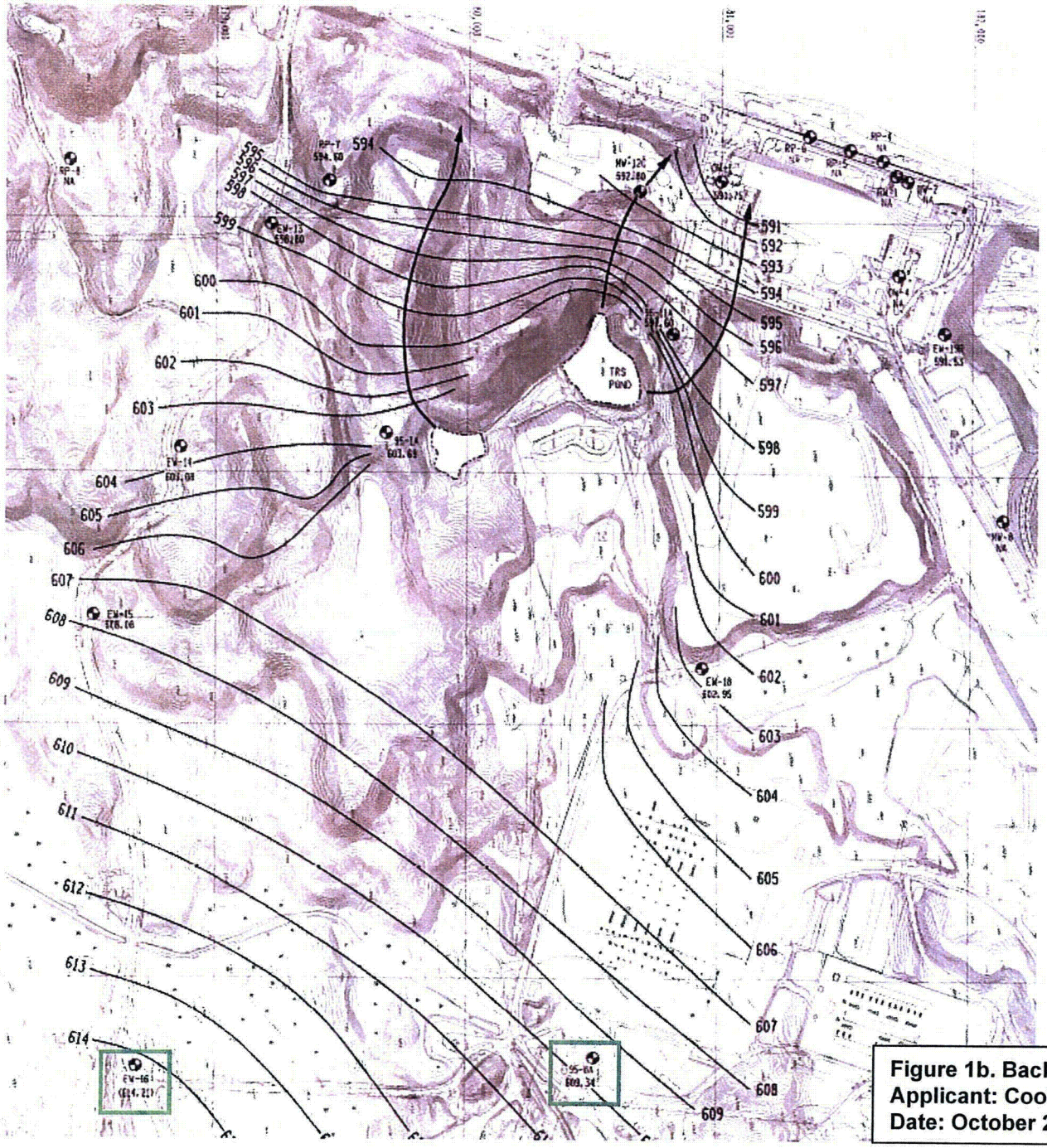

Figure 1b. Background Monitoring Well Locations
Applicant: Cook Nuclear Plant
Date: October 2008

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
January-05	1		0.222				6.3	8.2							Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.237				6.4	8.2							
	3		0.244		3.45	48.6	6.6	8.2							
	4		0.219				6.3	8.2						31	
	5		0.225				6.6	8.2					5.7		
	6		0.225				6.8	8.2							
	7		0.225				6.3	8.2							
	8		0.225				6.5	8.2							
	9		0.225				6.7	8.2							
	10		0.225		1.5	9	6.4	8.2							
	11		0.225				6.6	8.2						35	
	12		0.225				6.4	8.2					5.9		
	13		0.225				6.5	8.2							
	14		0.225				7.4	7.6							
	15		0.225				7.4	8							
	16		0.225				6.6	8							
	17		0.225		1.3	<3	6.6	8.2							
	18		0.225				6.3	8.2						26	
	19		0.225				6.3	8.2							
	20		0.326				6.3	8.2					9.6		
	21		0.426				6.6	8.2							
	22		0.738				6.3	8.2							
	23		0.917				6.3	8.2							
	24		0.643		0.95	<3	6.3	8.2							
	25		0.501				6.6	8.2							
	26		0.580				6.6	8.2					365	963	
	27		0.305				6.3	8							
	28		0.290				7	8.2							
	29		0.236				6.3	8.2						19	
	30		0.205				6.3	8.2							
	31		0.288		<0.7	<3	6.3	8.2							
	1		0.322				6.6	7.8							
	2		0.386				6.3	8.2					283		
	3		0.362				6.3	8.2							
	4		0.411				6.3	8.2						21	
	5		0.339				6.4	8.2							
	6		0.326				6.3	8.2							
	7		0.347		1.18	<3	6.6	8.2					9.3		
	8		0.293				6.6	8.2							
	9		0.284				6.3	8.2						33	
	10		0.451				6.6	8.2							
	11		0.260				6.4	8.2							005.xls rate (N) added 6/1/2006

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
February-05	12		0.260				6.3	8.2							Data from Daily GW 2 Chloride, TIN, Ammonia, Nitrite (N), Ni
	13		0.262				6.4	8.2							
	14		0.396		0.97	<3	6.4	8.2							
	15		0.392				6.3	8.2							
	16		0.397				6.6	8.2					5.9	54	
	17		0.389				6.3	8.2							
	18		0.358				6.3	8.2							
	19		0.389				6.4	8.2							
	20		0.374				6.4	8.2							
	21		0.402		3.27	<3	6.8	8.2							
	22		0.446				6.4	8.2					5.9		
	23		0.424				6.5	8.2							
	24		0.425				6.5	8.2						40	
	25		0.371				6.6	8.2							
	26		0.415				6.3	8.2							
	27		0.408				6.3	8.2							
	28		0.386		1.21	<3	6.3	8.2							
March-05	1		0.499				6.3	8.2							Data from Daily GW 2005.xls de, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.489		1.2	<3	6.3	8.2					5.1	21	
	3		0.432				6.3	8.2							
	4		0.377				6.5	8.2							
	5		0.428				6.3	8.2							
	6		0.409				6.3	8.2							
	7		0.529		1.5	8.9	6.3	8.2							
	8		0.472				6.3	8.2							
	9		0.472				6.3	8.2					6.4		
	10		0.398				7	8.2						38	
	11		0.291				6.3	8.2							
	12		0.478				6.6	8.2							
	13		0.394				6.3	8.2							
	14		0.374		<0.7	<3	6.8	8.2							
	15		0.368				6.3	8.2						53	
	16		0.561				6.6	8.2					7.7		
	17		0.399				6.3	8.2							
	18		0.471				6.3	8.2							
	19		0.465				6.3	8.2							
	20		0.456				6.8	8.2							
	21		0.381		1.7	9.6	6.6	8.2							
	22		0.416				6.3	8.2						638	
	23		0.451				6.6	8.2					7		
	24		0.466				6.3	8.2							
	25		0.473				6.9	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	26		0.674				6.3	8.2							Chlor
	27		0.732				6.4	8.2							
	28		0.449		1.3	7.5	6.3	8.2							
	29		0.425				6.3	8.2						35	
	30		0.466				6.6	8.2					5.9		
	31		0.392				6.3	8.2							
April-05	1		0.409				6.4	8.2							Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.411				6.3	8.2							
	3		0.399				6.6	8.2							
	4		0.445				6.3	8.2							
	5		0.392		0.7	6	6.3	8.2							
	6		0.392				6.3	8.2					5.7		
	7		0.358				6.3	8.2							
	8		0.325				6.3	8.2						29	
	9		0.379				6.4	8.2							
	10		0.464				6.4	8.2							
	11		0.340		<0.7	<3	6.8	8.2							
	12		0.379				6.3	8.2						38	
	13		0.322				6.6	8.2					6		
	14		0.399				6.6	8.2							
	15		0.437				6.3	8.2							
	16		0.404				6.8	8.2							
	17		0.552				6.4	8.2							
	18		0.383		1.47	394	6.3	8.2							
	19		0.599				6.6	8.2					6.5	35	
	20		0.506				6.6	8.2							
	21		0.582				6.8	8.2							
	22		0.762				6.3	8							
	23		0.811				6.3	8.2							
	24		0.758				6.4	8.2							
	25		1.329		5.3	38	6.5	8.2					4.5		
	26		1.560				6.3	8.2							
	27		1.239			27	6.6	8.2						27	
	28		1.288				6.3	8.2							
	29		1.310				6.3	8.2							
	30		1.110				6.3	8.2							
	1		0.558				6.3	8.2							1/2006
	2		0.443		1.19	3	6.6	8.2							
	3		0.393				6.4	8.2							
	4		0.360				6.5	8.2					9.1	41	
	5		0.428				6.5	8.2							
	6		0.413				6.8	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
May-05	7		0.431				6.5	8.2							Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/
	8		0.402				6.5	8.2							
	9		0.517		1.5	14	6.3	8.2						67	
	10		0.445				6.5	8.2							
	11		0.458				6.3	8.2					5.1		
	12		0.418				6.5	8.2							
	13		0.428				7.4	8							
	14		0.459				6.4	7.9							
	15		0.567				7.4	7.8							
	16		0.653		<0.7	9	7.2	7.8							
	17		0.473				6.3	8.2							
	18		0.485				7.6	8					8.6	31	
	19		0.426				6.4	8.2							
	20		0.438				6.3	8.2							
	21		0.468				6.6	8.2							
	22		0.497				6.6	8.2							
	23		0.484		<0.7	<3	6.3	8.2							
	24		0.376				6.3	8.2						47	
	25		0.379				6.3	8.2					7.9		
	26		0.332				6.3	8.2							
	27		0.364				6.4	8.2							
	28		0.355				6.7	8.2							
	29		0.358				6.3	8.2							
	30		0.385		<0.7	<3	6.3	8.2							
	31		0.454				6.7	8.2						37	
June-05	1		0.390				6.4	8.2					5.2		n Daily GW 2005.xls Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.411				6.5	8.2							
	3		0.457				6.3	8.2							
	4		0.419				7	8.2							
	5		0.490				6.3	8.2							
	6		0.353		<0.7	<3	6.6	8.2							
	7		0.467				6.7	8.2						36	
	8		0.429				6.3	8.2					5.3		
	9		0.408				6.3	8.2							
	10		0.396				6.3	8.2							
	11		0.439				6.3	8.2							
	12		0.418				6.6	8.2							
	13		0.404		<0.7	<3	6.3	8.2							
	14		0.332				6.6	8.2						38	
	15		0.334				6.3	8.2					5.7		
	16		0.190				6.3	8.2							
	17		0.342				6.3	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	18		0.562				6.3	8.2							Data fror
	19		0.407				6.3	8.2							
	20		0.487		<0.7	<3	6.3	8.2							
	21		0.485				6.3	8.2						36	
	22		0.395				6.8	8.2					152		
	23		0.417				6.3	8.2							
	24		0.340				6.3	8.2							
	25		0.337				6.8	8.2							
	26		0.419				6.8	8.2							
	27		0.336		0.84	<3	6.6	8.2							
	28		0.296				6.8	8.2						53	
	29		0.313				7	8.2							
	30		0.269				6.5	8.2					5.7		Chloride, TIN, Ammonia,
	1		0.281				6.4	8.2							
	2		0.207				6.4	8.2							
	3		0.280				6.8	8.2							
	4		0.252				6.6	8.2							
	5		0.292		1.6	6.7	6.3	8.2						36	
	6		0.450				6.3	8.2					5.1		
	7		0.462				6.3	8.2							
	8		0.494				6.3	8.2							
	9		0.481				6.4	8.2							
	10		0.456				6.3	8.2							
	11		0.447		1.7	11.2	6.4	8.2							
	12		0.520				7	8.2							
	13		0.498				6.6	8.2					5		
	14		0.529				6.8	8.2							
July-05	15		0.511				6.3	8.2						36	
	16		0.459				6.3	8.2							
	17		0.556				6.3	8.2							
	18		0.461		2.3	17.5	6.6	8.2							
	19		0.497				6.3	8.2					5	35	
	20		0.497				6.3	8.2							
	21		0.413				6.6	8.2							
	22		0.290				6.7	8.2							
	23		0.296				6.6	8.2							
	24		0.346				6.3	8.2							
	25		0.375		2.31	12.6	6.5	8.8							
	26		0.363				6.3	8.2						33	
	27		0.342				6.5	8.2							
	28		0.368				6.5	8.2							
	29		0.412				6.3	8.5					4.7		Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	30		0.420				6.7	8.7							
	31		0.369				6.8	8.2							
August-05	1		0.410		2.1	9.6	6.8	8.2							Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.378				6.5	8.2						48	
	3		0.398				6.6	8.2					5.9		
	4		0.308				6.8	8.2							
	5		0.337				6.8	8.2							
	6		0.348				6.8	8.2							
	7		0.331				6.6	8.2							
	8		0.324		1.4	6.9	6.4	8.2							
	9		0.310				6.7	8.2						46	
	10		0.353				6.6	8.2					380		
	11		0.273				6.3	8.2							
	12		0.331				6.5	8.2							
	13		0.323		<0.7	9.8	6.6	8.2							
	14		0.295				6.3	8.2							
	15		0.341				6.3	8.2							
	16		0.421				6.6	8.2						44	
	17		0.299				6.7	8.2					6.3		
	18		0.368				6.6	8.2							
	19		0.484				6.5	8.2							
	20		0.356				6.6	8.2							
	21		0.349				6.3	8.2							
	22		0.410		<0.7	<3	6.8	8.2							
	23		0.251				6.4	8.2						42	
	24		0.347				6.4	8.2					6.3		
	25		0.341				6.4	8.2							
	26		0.328				6.4	8.2							
	27		0.364				6.8	8.2							
	28		0.366				6.6	8.2							
	29		0.405		0.9	<3	6.6	8.2							
	30		0.344				6.4	8.2						45	
	31		0.358				6.3	8.2					5.9		
	1		0.321				6.6	8.2							added 6/1/2006
	2		0.388				6.6	8.2							
	3		0.332				6.4	8.2							
	4		0.350				6.4	8.2							
	5		0.339		<0.7	<3	6.6	8.2							
	6		0.382				6.8	8.2							
	7		0.415				6.8	8.2					6.7	43	
	8		0.350				6.8	8.2							
	9		0.325				6.6	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
September-05	10		0.344				6.6	8.2							Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N)
	11		0.356				6.3	8.2							
	12		0.318		<0.7	<3	6.8	8.2							
	13		0.373				7	8.2						44	
	14		0.296				6.8	8.2					6.6		
	15		0.314				6.8	8.2							
	16		0.384				6.3	8							
	17		0.310				6.6	8.2							
	18		0.423				6.6	8.2							
	19		0.348		<0.7	<3	6.6	8.2							
	20		0.367				6.6	8.2						41	
	21		0.357				6.6	8.2					6.4		
	22		0.412				6.3	8.2							
	23		0.606				6.3	8.2							
	24		0.505				6.3	8.2							
	25		0.493				6.3	8.2							
	26		0.812		<0.7	141.4	6.3	8.2						44	
	27		0.481				6.3	8.2							
	28		0.400				6.6	8.2					482		
	29		0.399				6.3	8.2							
	30		0.718				6.8	8.2							
October-05	1		0.360				6.6	8.2							Data from Daily GW 2005.xls mmonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.399				6.4	8.2							
	3		0.412		<0.7	25.1	6.4	8.2							
	4		0.434				6.4	8.2							
	5		0.353				6.4	8.2					20.8		
	6		0.290				6.3	8.2							
	7		0.417				6.3	8.2						37	
	8		0.204				6.8	8.2							
	9		0.160				6.8	8.2							
	10		0.345		<0.7	<3	6.6	8.2							
	11		0.328				6.8	8.2							
	12		0.307				6.3	8.2					6		
	13		0.391				6.3	8.2						41	
	14		0.327				6.3	8.2							
	15		0.491				6.6	8.2							
	16		0.511				6.3	8.2							
	17		0.527		<0.7	12.1	6.3	8.2							
	18		0.647				6.8	8.2							
	19		0.915				6.4	8.2					444		
	20		0.745				6.3	8.2						50	
	21		0.899				6.3	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	22		0.686				6.3	8.2							Chloride, TIN, A
	23		0.684				6.3	8.2							
	24		0.738		<0.7	<3	6.3	8.2							
	25		0.819				6.4	8.2					6.3	41	
	26		0.741				6.4	8.2							
	27		0.664				6.3	8.2							
	28		0.535				6.3	8.2							
	29		0.245				6.6	8.2							
	30		0.532				6.4	8.2							
	31		0.468		<0.7	<3	6.5	8.2							
November-05	1		0.660				6.6	8.2					6	36	Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.545				6.6	8.2							
	3		0.685				6.6	8.2							
	4		0.590				6.6	7.8							
	5		0.860				6.3	7.8							
	6		0.692				7.4	7.8							
	7		0.756		0.8	<3	6.3	8.2							
	8		0.721				6.8	8.2							
	9		0.781				6.3	8.2					3.8	36	
	10		1.054				6.3	8.2							
	11		0.944				6.6	8.2							
	12		0.967				6.3	8.2							
	13		0.802				6.8	8.2							
	14		0.682		1	8.8	6.6	8.2							
	15		0.855				6.3	8.2							
	16		0.854				6.4	8.2					6.1	35	
	17		0.853				6.4	8.2							
	18		0.813				6.3	8.2							
	19		0.753				6.3	8							
	20		0.778				6.8	8.2							
	21		0.822		1.2	9.6	6.3	8.2							
	22		0.937				6.4	8.2					282		
	23		0.874				6.3	8.2							
	24		0.879				6.3	8						27	
	25		0.845				6.8	8.2							
	26		0.956				6.8	8.2							
	27		0.948				6.3	8.2							
	28		0.838		1.6	21.2	6.4	8.2							
	29		0.697				7	8.2						33	
	30		0.727				7	8.2					6.2		
	1		0.889				6.6	8.2							
	2		0.959				6.3	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
December-05	3		0.724				6.3	8.2							Data from Daily GW 2005.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	4		0.900				7	8.2							
	5		0.760		1.86	8.9	6.3	8.2							
	6		0.722				7.6	8.2						32	
	7		0.493				7.4	8.2					6.3		
	8		0.551				6.3	8.2							
	9		0.599				7.2	8.2							
	10		0.388				6.3	8.2							
	11		0.673				7.6	7.8							
	12		0.507		0.9	<3	6.3	8.2							
	13		0.399				7.8	8.2							
	14		0.523				6.6	8.2					5.7	27	
	15		0.305				6.3	8.2							
	16		0.218				7.6	8							
	17		0.246				6.5	8.2							
	18		0.207				6.5	8.2							
	19		0.399		<0.7	<3	6.7	8.2							
	20		0.248				6.3	7.9							
	21		0.504				6.6	8.2					6.4	34	
	22		0.285				6.6	7.6							
	23		0.457				7.6	8.1							
	24		0.177				7.5	8.2							
	25		0.117				6.5	8.2							
	26		0.326				6.6	8.2							
	27		0.220		<0.7	<3	6.5	8.2							
	28		0.158				6.3	8.2					8.7	36	
	29		0.362				6.8	8.2							
	30		0.226				6.6	8.2							
	31		0.234				7	8.2							
	1		0.188				6.8	8.2							2006.xls itrate (N) added 6/1/2006
	2		0.167		<0.7	<3	6.4	8.2							
	3		0.361				6.8	8.2						36	
	4		0.268				6.6	8.2					7.4		
	5		0.247				6.4	8.2							
	6		0.158				6.3	8							
	7		0.063				6.4	8.2							
	8		0.102				6.3	8.2							
	9		0.210		<0.7	<3	6.3	8.2							
	10		0.253				7.6	8.2					18.6	48	
	11		0.097				7.5	7.6							
	12		0.085				7.4	7.6							
	13		0.075				6.4	8							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
January-06	14		0.002				6.4	8							Data from Daily GW Chloride, TIN, Ammonia, Nitrite (N), N
	15		0.229				6.4	8							
	16		0.158		<0.7	16.2	6.6	7.8							
	17		0.043				6.3	8.2						28	
	18		0.020				6.3	8.2							
	19		0.411				6.3	8.2					54.4		
	20		0.392				6.3	8.2							
	21		0.174				6.3	8.2							
	22		0.135				6.3	8.2							
	23		0.145		<0.7	<3	6.3	8.2							
	24		0.144				6.8	8.2						29	
	25		0.207				6.6	8.2					7		
	26		0.161				6.4	8.2							
	27		0.133				6.3	8.2							
	28		0.038				6.4	8.2							
	29		0.143				6.3	8							
	30		0.150		<0.7	<3	6.3	8.2							
	31		0.218				6.7	8						32	
February-06	1		0.186				6.4	8					7.7		Data from Daily GW 2006.xls ride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.186				7	8.2							
	3		0.186				6.9	8.2							
	4		0.186				7.2	8.2							
	5		0.186				6.4	7.6							
	6		0.186				6.3	7.6							
	7		0.186		<0.7	14.6	6.3	8						90	
	8		0.186				6.3	8					13.2		
	9		0.186				6.6	8.2							
	10		0.186				6.6	8							
	11		0.186				6.3	8.2							
	12		0.186				7	8.2							
	13		0.186		<0.7	14.9	6.8	8.2							
	14		0.186				6.3	8.2						38	
	15		0.254				6.3	7.8					1020		
	16		0.348				6.3	8							
	17		0.186				6.6	8.2							
	18		0.186				6.4	7.4							
	19		0.186				6.3	8.2							
	20		0.270		1.5	<3	6.6	8.2							
	21		0.300				6.6	7.8						35	
	22		0.195				6.3	7.8					372		
	23		0.186				6.3	8.2							
	24		0.251				7	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	25		0.186				6.3	8.2							Chlo
	26		0.323				6.8	7.8							
	27		0.221		<0.7	<3	6.3	7.8							
	28		0.280				6.4	7.8						31	
March-06	1		0.330				7	8					9.4		Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.845				6.3	8							
	3		0.608				6.8	8.2							
	4		0.356				7	8.2							
	5		0.309				6.3	7.8							
	6		0.361		<0.7	5.6	6.8	8							
	7		0.319				7.2	7.8							
	8		0.406				6.6	7.8						31	
	9		0.354				6.3	7.4					187		
	10		0.323				7	7.5							
	11		0.343				7.2	7.6							
	12		0.312				6.3	7.8							
	13		0.379		<0.7	<3	7.2	7.8							
	14		0.328				6.3	8					6.3		
	15		0.315				6.3	7.8							
	16		0.333				7	8.2						34	
	17		0.345				6.5	8.2							
	18		0.305				6.3	7.4							
	19		0.317				6.3	8.2							
	20		0.312		<0.7	5.3	6.3	8.2							
	21		0.304				6.4	8.2						35	
	22		0.379				6.3	8					143		
	23		0.353				6.3	8							
	24		0.321				6.3	7.6							
	25		0.376				6.3	8.2							
	26		0.819				6.3	8.2							
	27		0.420		<0.7	4.3	6.6	7					6.7		
	28		0.373				7	7.8						30	
	29		0.316				6.3	8.2							
	30		0.473				7.2	8							
	31		0.473				7	7.6							
	1		0.365				6.3	8.2							d 6/1/2006
	2		0.384				6.3	8							
	3		0.442		<0.7	<3	6.3	7.4							
	4		0.393				7	7.4						29	
	5		0.368				7.1	8					7.6		
	6		0.450				7.4	7.8							
	7		0.317				7.4	8							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
April-06	8		0.342				6.3	7.8							Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) adde
	9		0.395				6.3	8.2							
	10		0.412		<0.7	<3	7.4	7.8							
	11		0.564				6.6	8							
	12		0.588				6.3	8.2					8.6		
	13		0.359				6.3	7.8						31	
	14		0.346				6.8	7.8							
	15		0.313				7.2	7.8							
	16		0.334				7	8							
	17		0.388		<0.7	3.3	7.4	8.00							
	18		0.392				7.4	8.00							
	19		0.344			9.1	6.3	8.20					7.2	23	
	20		0.348				6.3	8.00							
	21		0.412				6.3	8.00							
	22		0.415				6.3	8.00							
	23		0.338				6.3	8.00							
	24		0.328		1.5	534	7.2	8.20							
	25		0.433				7.4	8.00						22	
	26		0.467				7.6	7.80					5.5		
	27		0.376				6.3	8.00							
	28		0.503				6.3	7.80							
	29		0.649				6.3	8.00							
	30		0.688				7.6	7.80							
May-06	1		0.647		1.5	95.6	6.3	8.00							from Daily GW 2006.xls hia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.640				6.3	8.20						28	
	3		0.772				6.3	8.20					2.5		
	4		0.798				6.3	8.20							
	5		0.848				6.3	8.20							
	6		0.763				6.3	8.20							
	7		0.850				6.3	8.20							
	8		0.626		<0.7	<3	6.4	8.20							
	9		0.494				6.3	8.20							
	10		0.381				6.3	8.20					7.5	35	
	11		0.378				6.3	8.20							
	12		0.310				6.5	8.20							
	13		0.407				6.3	8.20							
	14		0.329				6.8	8.20							
	15		0.287		<0.7	<3	7	8.20							
	16		0.340				6.3	8.20							
	17		0.428				6.4	8.20					7.9	33	
	18		0.367				6.3	8.20							
	19		0.538				6.6	8.20							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	20		0.338				6.4	8.20							Data
	21		0.370				6.4	8.20							
	22		0.326		<0.7	<3	6.3	8.20							
	23		0.422				6.6	8.20						36	
	24		0.471				6.3	8.20					7		
	25		0.367				6.4	8.50							
	26		0.371				6.8	8.20							
	27		0.381				6.8	8.20							
	28		0.376		<0.7	<3	6.3	8.20							
	29		0.349				6.6	8.20							
	30		0.412				6.8	8.20						37	
	31		0.373				7	8.20					6.8		Chloride, TIN, Ammo
	1		0.333		<0.7	<3	7.2	8.20							
	2		0.393	9.6	<0.7	<3	6.4	8.20							
	3		0.362				6.3	8.20							
	4		0.391				6.3	8.20							
	5		0.680	11.3	<0.7	<3	6.3	8.20	3.7	3.2	<0.05	0.5			
	6		0.400		<0.7	<3	6.6	8.20						34	
	7		0.459		<0.7	<3	6.3	8.20							
	8		0.409		1.8	<3	6.3	8.20							
	9		0.388		1.8	<3	6.4	8.20							
	10		0.428				6.3	8.20					7.3		
	11		0.383				6.6	8.20							
	12		0.450	11	<0.7	<3	6.3	8.20							
	13		0.341		<0.7	<3	6.3	8.20					15.6		
	14		0.391		<0.7	<3	6.3	8.20							
	15		0.407		<0.7	<3	6.6	8.20						33	
	16		0.383		<0.7	<3	6.4	8.20							
	17		0.389				6.3	8.20							
	18		0.382				6.3	8.20							
	19		0.419	10.5	<0.7	5.3	6.8	8.20							
	20		0.385		<0.7	<3	6.4	8.20					9.3	39	
	21		0.412		<0.7	3.3	6.3	8.20							
	22		0.414		1.1	4.6	7	8.20							
	23		0.342		0.8	3.3	6.6	8.20							
	24		0.378				6.4	8.20							
	25		0.400				6.3	8.20							
	26		0.454	9.8	<0.7	<3	6.6	8.20							
	27		0.360		<0.7	<3	6.8	8.20					9.4		
	28		0.412		<0.7	<3	6.4	8.20						36	
	29		0.401		<0.7	<3	6.3	8.20							
June-06	30		0.373		<0.7	<3	6.4	8.20							Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
July-06	1		0.418				6.3	8.20							Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.434				6.6	8.20							
	3		0.512	11.5	<0.7	<3	7	8.20							
	4		0.366		<0.7	<3	6.4	8.20							
	5		1.265		<0.7	<3	6.6	8.20							
	6		0.363		<0.7	<3	6.4	8.20							
	7		0.430		<0.7	<3	6.4	8.20					7.3	35	
	8		0.381				6.4	8.20							
	9		0.486				6.6	8.20							
	10		0.406	11	<0.7	<3	6.6	8.20	6	5.6	<0.05	0.4			
	11		0.371		<0.7	4.2	6.4	8.20						38	
	12		0.441		<0.7	<3	6.4	8.20							
	13		0.375		<0.7	7.8	6.5	8.20					9.4		
	14		0.396		<0.7	<3	7	8.20							
	15		0.428				6.3	8.20							
	16		0.440				6.8	8.20							
	17		0.451	11.5	1	<3	6.8	8.60							
	18		0.330		1.6	<3	7.2	8.20							
	19		0.414		2.2	<3	7.2	8.50							
	20		0.277		1.3	<3	7	8.50							
	21		0.397		2	<3	7	8.50							
	22		0.403				7	8.20							
	23		0.360				7.8	8.20							
	24		0.347	10.8	1.3	<3	7.6	8.80							
	25		0.389		<0.7	<3	7	8.50					6.7	40	
	26		0.355		<0.7	<3	7.2	8.50							
	27		0.381		<0.7	<3	7.4	8.40						25	
	28		0.417		<0.7	4.8	7.4	8.20							
	29		0.373				7	8.50					1950	3751	
	30		0.392				7	8.50							
	31		0.526	4.3	1.2	30.7	7	8.50							
	1		0.780		5.8	243.7	7	8.50							(N) added 6/1/2006
	2		0.709		15.4	269.5	7	8.50							
	3		0.709		<0.7	3.6	7	8.50							
	4		0.548		0.8	6.4	7	8.50							
	5		0.538				7	8.50							
	6		0.673				7	8.50							
	7		0.369	9.3	0.7	<3	7	8.50	0.4	0.1	<0.05	0.3			
	8		0.365		<0.7	<3	7	8.50							
	9		0.429		<0.7	<3	7	8.50							
	10		0.367		<0.7	<3	7	8.50					4884	3430	
	11		0.438		<0.7	<3	7	8.50							xls

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
August-06	12		0.348				7.3	8.50							Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate
	13		0.313				7	8.50							
	14		0.305	8.3	<0.7	<3	7.6	8.40							
	15		0.364		<0.7	<3	7.8	8.50							
	16		0.422		<0.7	<3	7	8.50							
	17		0.351		1.4	<3	7	8.50							
	18		0.386		0.8	<3	7	8.50							
	19		0.375				7	8.50							
	20		0.434				7	8.50							
	21		0.335	9.8	0.7	<3	7.2	8.50							
	22		0.357		<0.7	<3	7.2	8.50							
	23		0.335		1.02	<3	7.2	8.50							
	24		0.318		<0.7	<3	7	8.50							
	25		0.530		<0.7	<3	7.2	8.50					6.7	40	
	26		0.342				7	8.50							
	27		0.383				7	8.50							
	28		0.352	10.3	<0.7	<3	7	8.50							
	29		0.420		<0.7	<3	7	8.30							
	30		0.382		<0.7	<3	7	8.50							
	31		0.403		<0.7	<3	7	8.50							
September-06	1		0.331		0.74	<3	7	8.50							Data from Daily GW 2006.xls N, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.397				7	8.50					2205	2988	
	3		0.429				7.6	8.50							
	4		0.562	7.5	<0.7	3.7	7	8.50							
	5		0.348		0.8	4.2	7	8.50	4.07	3.6	0.07	0.4			
	6		0.391		<0.7	<3	7	8.40							
	7		0.404		<0.7	<3	7	8.50							
	8		0.380		<0.7	<3	7	8.50							
	9		0.320				7.2	8.50							
	10		0.395				7.4	8.50							
	11		0.313	7.5	<0.7	<3	7	8.50							
	12		0.331		<0.7	<3	7	8.50							
	13		0.363		0.94	<3	7.2	8.50							
	14		0.394		0.9	<3	7.4	8.50							
	15		0.356		0.9	<3	7.4	8.50							
	16		0.434				7	8.50							
	17		0.638				7.3	8.50							
	18		0.451	9	<0.7	<3	7	8.50							
	19		0.384		<0.7	8.3	7	8.50							
	20		0.368		3.6	181.6	7	8.40							
	21		0.372		3.3	167.5	7	8.50							
	22		0.402		1	156.1	7	8.50							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	23		0.363				7	8.50							Chloride, TI
	24		0.384				7.4	8.40							
	25		0.337	9	<0.7	<3	8	8.70							
	26		0.341		<0.7	<3	7.2	8.40						22	
	27		0.328		<0.7	<3	8	8.40					6.4		
	28		0.336		<0.7	<3	7	8.50							
	29		0.372		<0.7	<3	7	8.50							
	30		0.333				7	8.50							
October-06	1		0.367				7	8.50							Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.406	8.2	<0.7	<3	7.6	8.40	4.37	3.9	0.17	0.3			
	3		0.349		2.8	167	7	8.90							
	4		0.339		1.62	22.5	7	8.40							
	5		0.390		<0.7	7.5	7.6	8.20							
	6		0.364		<0.7	<3	7.8	8.20					7		
	7		0.340				7.8	8.40							
	8		0.348				7.8	8.50							
	9		0.332	10.9	<0.7	<3	7.1	8.50							
	10		0.348		<0.7	<3	7.1	8.30							
	11		0.297		0.84	14.9	7	8.40						22	
	12		0.330		2.01	9.23	7	8.40							
	13		0.399		1.2	4.2	7	8.50					1593	3700	
	14		0.383				7	8.40							
	15		0.365				7	8.20							
	16		0.335	10	<0.7	<3	8	8.30							
	17		0.317		1.2	9.5	7	8.40							
	18		0.334		1.6	14.1	7.8	8.20							
	19		0.332		<0.7	<3	7.6	8.20							
	20		0.381		1.3	7.04	7.6	8.20							
	21		0.355				7	8.30							
	22		0.348				7	8.40							
	23		0.365	9	<.7	<3	7.5	8.10							
	24		0.370		<.7	<3	7.6	8.60							
	25		0.351		<.7	<3	7.6	8.00							
	26		0.355		1.57	14.53	7	8.40							
	27		0.397		<.7	<3	7	8.20							
	28		0.336				7	8.50							
	29		0.375				7.8	8.20							
	30		0.403	10.5	<.7	<3	7	8.00							
	31		0.336		2.1	15.01	7.2	8.00							
	1		0.411		1.2	16.94	7.6	8.20							
	2		0.361		<0.7	4.96	7.6	8							
	3		0.365		<0.7	4.98	7.6	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
November-06	4		0.318				7.2	8.4							Data from Daily GW 2006.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	5		0.359				7	9							
	6		0.474	17.8	<0.7	<3	7	8	1.4	1.0	0.1	0.3	1560	2700	
	7		0.647		<0.7	<3	7.6	8.20							
	8		0.705		<0.7	<3	7.6	9							
	9		0.823		<0.7	<3	7.4	8.5					9.4		
	10		0.824		1.1	4.5	7	8.5							
	11		1.104				7	8.4							
	12		0.889				7.6	8.4							
	13		0.763	18.25	<0.7	<3	7.4	9							
	14		0.790		<0.7	<3	7.8	8.4							
	15		0.750		<0.7	<3	7	8.4							
	16		0.706		0.8	<3	7	8.5							
	17		0.650		<0.7	<3	7.8	8.2							
	18		0.605				7	8.0							
	19		0.639				7	8.0							
	20		0.520	21.75	<0.7	<3	7	8.4							
	21		1.056		0.9	<3	7.5	8.3						52	
	22		0.663		<0.7	<3	7.4	8.0							
	23		0.547		<0.7	<3	7.8	8.0							
	24		0.613		0.9	<3	7.8	8.0							
	25		0.582				7.8	8.1							
	26		0.562				7	8.1							
	27		0.478	19	<0.7	<3	7	8.4							
	28		0.469		1.05	<3	7	8.50							
	29		0.654		<0.7	<3	7	8.5							
	30		0.434		<0.7	<3	7	8.5							
er-06	1		0.419		<0.7	3.6	7	8.5							GW 2006.xls (N), Nitrate (N) added 6/1/2006
	2		0.480				7	8.5					85.1	1875	
	3		0.441				7	8.5							
	4		0.367	6.5	<0.7	3.8	7	8.5	2.6	2.4	<0.05	0.2			
	5		0.321		<0.7	<3.0	7	8.5					6	18	
	6		0.368		<0.7	3.3	7.8	8.5							
	7		0.304		<0.7	7.1	7	8.5							
	8		0.421		<0.7	5.7	7	8.5							
	9		0.421				7	8.5							
	10		0.421				7	8.5							
	11		0.421	9.5	1.5	4.8	7	8.5							
	12		0.421		<0.7	<3.0	7	8.5							
	13		0.488		<0.7	<3.0	7	8.5							
	14		0.775		<0.7	<3.0	7.4	8.4							
	15		0.597		<0.7	<3.0	7	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
Decemb	16		0.496				7	8.5							Data from Daily Chloride, TIN, Ammonia, Nitrite
	17		0.537				7	8.5							
	18		0.484	6.5	<0.7	3.3	7.2	8.5							
	19		0.472		<0.7	<3.0	7	8.5							
	20		0.436		1.6	11.3	7	8.5							
	21		0.391		<0.7	<3.0	7	8.5							
	22		0.378		1.1	5.7	7.9	8.5							
	23		0.380				7.3	8.5							
	24		0.351				7.2	8.4							
	25		0.411	8.25	<0.7	<3.0	7	8.3							
	26		0.341		<0.7	<3.0	7	8.5							
	27		0.381		0.96	<3.0	7	8.5							
	28		0.397		<0.7	<3.0	7	8.5							
	29		0.468		<0.7	<3.0	7.9	8.5							
	30		0.368				7	8.4							
	31		0.446				7	8.5							
January-07	1		0.450	9	<0.7	3.5	7.6	8.3					82.3		Data from Daily GW 2007.xls oride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.402		<0.7	8.2	7.3	8.5	5.4	4.9	<0.05	0.5			
	3		0.381		<0.7	3.5	7	8.5							
	4		0.377		<0.7	3.9	7	8.5							
	5		0.452		<0.7	<3.0	7.4	8.2					3230	7200	
	6		0.457				7	8.5							
	7		0.395				7	8.5							
	8		0.404	10	0.84	<3.0	7	8.5							
	9		0.347		0.79	<3.0	7	8.4							
	10		0.412		<0.7	<3.0	7	8.5							
	11		0.612		0.73	<3.0	7	8.5						27	
	12		0.391		0.73	<3.0	7	8.5							
	13		0.400				7	8.5							
	14		0.387				7	8.5							
	15		0.423	8	<0.7	<3.0	7.2	8.5							
	16		0.375		0.94	3.8	7.7	8.4							
	17		0.381		<0.7	<3.0	7	8.4							
	18		0.419		1.4	9.2	7.7	8.4							
	19		0.403		<0.7	<3.0	7.4	8.5							
	20		0.355				7	8.5							
	21		0.471				7	8.5							
	22		0.363	8.5	<0.7	<3.0	7	8.5							
	23		0.814		<0.7	<3.0	7	8.5							
	24		0.374		0.72	<3.0	7	8.5							
	25		0.314		0.77	<3.0	7	8.5							
	26		0.327		0.77	<3.0	7	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	27		0.315				7.6	8.5							Ch
	28		0.265				7	8.5							
	29		0.499		<0.7	<3.0	7.8	8.5							
	30		0.398	11.5	<0.7	<3.0	7	8.5							
	31		0.401		<0.7	<3.0	7	8.5							
February-07	1		0.396		<0.7	<3.0	7	8.5							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.389		<0.7	<3.0	7	8.5							
	3		0.360				7	8.5							
	4		0.457				7	8.5							
	5		0.434	7.5	<0.7	<3.0	7	8.50							
	6		0.403		<0.7	<3.0	7.6	8.50					7.3	25	
	7		0.424		<0.7	<3.0	7	8.50							
	8		0.399		<0.7	<3.0	7	8.50							
	9		0.404		<0.7	4.6	7	8.5							
	10		0.510				7	8.5					1957	2424	
	11		0.465				7.8	8.5							
	12		0.457	9.5	<0.7	<3.0	7	8.5							
	13		0.358		<0.7	<3.0	7	8.5							
	14		0.364		<0.7	<3.0	7.8	8.4							
	15		0.373		1.1	<3.0	7.8	8.5							
	16		0.357		<0.7	<3.0	7	8.5							
	17		0.425				7.5	8.5							
	18		0.481				7	8.5							
	19		0.433	10.5	<0.7	<3.0	7	8.5							
	20		0.444		<0.7	<3.0	7	8.5	4.3	3.8	<0.05	0.5			
	21		0.548		<0.7	<3.0	7	8.5							
	22		0.368		<0.7	<3.0	7	8.5							
	23		0.418		<0.7	<3.0	7	8.5							
	24		0.388				7	8.5							
	25		0.485				7	8.5							
	26		0.418	12.5	<0.7	<3.0	7	8.5							
	27		0.401		0.812	7.6	7.6	8.5							
	28		0.342		<0.7	6.2	7	8.5							
	1		0.407		<0.7	<3.0	7	8.5							dded 6/1/2006
	2		0.403		1.1	4.8	7	8.5					2434.4	3550	
	3		0.419				7	8.5							
	4		0.393				7	8.5							
	5		0.448	12	<0.7	<3.0	7.4	8.6							
	6		0.372		0.9	<3.0	7	8.5							
	7		0.401		<0.7	<3.0	7	8.5							
	8		0.410		<0.7	<3.0	7	8.5					7.8	27	
	9		0.379		0.8	<3.0	7	8.5							

Q -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
6.5	9.0							
S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
7	9							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) a
7	8.4							
.000	8.4							
7	8.5	2.6	2.1	<0.05	0.5			
7	9							
7	8.5							
7	8.5							
7	8.4							
7.6	8.2							
7	8.5							
7	8.5							
7.4	8.5							
7	8.5							
7	8.4							
7	8.5							
7.4	8.5							
7	8.5							
7	8.5							
7	8.5							
7	8.5							
7	8.4							
7	8.4							
7	8.5							
7	8.5	3	2.6	<0.05	0.4			ata from Daily GW 2007.xls monia, Nitrite (N), Nitrate (N) added 6/1/2006
7	8.5							
7	8.5							
7	8.5							
7	8.4							
7	8.2							
7	8.5							
7	8.5					1782	3500	
7.4	8.0					17.4	38	
7	8.4							
7	8.5							
7	8.5							
7	8.5							
7	8.5							
7	8.5							
8	8.5							
7	8.5							
7	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	E
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	L
		LIMITS	2.400				
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S
March-07	10		0.394				
	11		0.583				
	12		0.397	12	1	<3.0	7.
	13		0.330		1.1	<3.0	
	14		0.441		0.8	<3.0	
	15		0.457		1.6	<3.0	
	16		0.446		2.2	<3.0	
	17		0.428				
	18		0.375				
	19		0.394	11	<0.7	<3.0	
	20		0.392		0.08	<3.0	
	21		0.475		<0.7	<3.0	
	22		0.394		<0.7	<3.0	
	23		0.429		1.2	<3.0	
	24		0.372				
	25		0.412				
	26		0.386	8.8	1	<3.0	
	27		0.345		<0.7	<3.0	
	28		0.473		<0.7	<3.0	
	29		0.383		1	<3.0	
	30		0.356		<0.7	<3.0	
	31		0.421				
April-07	1		0.357				
	2		0.520	8.5	<0.7	<3.0	
	3		0.410		<0.7	<3.0	
	4		0.428		<0.7	<3.0	
	5		0.424		<0.7	<3.0	
	6		0.426		<0.7	<3.0	
	7		0.344				
	8		0.383				
	9		0.434	12.7	<0.7	<3.0	
	10		0.401		<0.7	<3.0	
	11		0.485		<0.7	<3.0	
	12		0.485		<0.7	<3.0	
	13		0.319		<0.7	<3.0	
	14		0.358				
	15		0.396				
	16		0.390	11.3	1.5	<3.0	
	17		0.371		1.7	<3.0	
	18		0.383		1.6	<3.0	
	19		0.436		2.1	<3.0	
	20		0.442		2	<3.0	

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	21		0.463				7	8.5							D Chloride, TIN, Am
	22		0.407				7	8.5							
	23		0.448	12.5	<0.7	<3.0	7	8.5							
	24		0.397		<0.7	<3.0	7	8.5							
	25		0.357		<0.7	8	7	8.5							
	26		0.403		<0.7	<3.0	7.4	8.5							
	27		0.552		<0.7	6	7	8.5							
	28		0.360				7	8.4							
	29		0.354				7	8.5							
	30		0.376	11.5	<0.7	<3	7	8.5							
May-07	1		0.380		0.7	<3.0	7	8.5							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.489		<0.7	<3.0	7	8.5							
	3		0.575		0.9	<3.0	7	8.5							
	4		0.349		<0.7	<3.0	7	8.5							
	5		0.339				7	8.4							
	6		0.459				7	8.5							
	7		0.383	11.4	<0.7	<3.0	7	8.5	4.2	3.8	<0.05	0.4	2820	8360	
	8		0.443		<0.7	<3.0	7	8.5							
	9		0.373		<0.7	4.5	7	8.5					7.1	38	
	10		0.426		<0.7	5.6	7	8.5							
	11		0.391		<0.7	<3.0	7.6	8.5							
	12		0.388				7	8.5							
	13		0.273				7	8.5							
	14		0.335	11	<0.7	<3.0	7	8.5							
	15		0.332		<0.7	<3.0	7	8.5							
	16		0.412		1	<3.0	7	8.5							
	17		0.340		0.7	<3.0	7	8.5							
	18		0.324		1.2	<3.0	7	8.5							
	19		0.323				7	8.5							
	20		0.290				7	8.5							
	21		0.291	9.5	<0.7	<3.0	7.2	8.5							
	22		0.289		<0.7	<3.0	7	8.5							
	23		0.394		<0.7	<3.0	7	8.5							
	24		0.427		<0.7	<3.0	7	8.5							
	25		0.372		<0.7	<3.0	7	8.5							
	26		0.471				7	8.5							
	27		0.397				7	8.5							
	28		0.393	12.8	<0.7	<3.0	7	8.5							
	29		0.359		<0.7	<3.0	7	8.5							
	30		0.371		<0.7	<3.0	7	8.5							
	31		0.353		<0.7	<3.0	7	8.5							
	1		0.701		<0.7	<3.0	7	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
June-07	2		0.357				7	8.5							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	3		0.409				7	8.5							
	4		0.388	11.3	<0.7	<3.0	7	8.5							
	5		0.588		<0.7	<3.0	7	8.5	2.3	1.9	<0.05	0.4			
	6		0.692		<0.7	<3.0	7	8.5							
	7		0.468		1.4	6.2	7	8.5					8040	4800	
	8		0.456		<0.7	<3.0	7	8.5							
	9		0.592				7	8.5							
	10		0.539				7	8.5							
	11		0.385	11.5	<0.7	<3.0	7	8.5							
	12		0.482		<0.7	<3.0	7	8.5							
	13		0.346		<0.7	<3.0	7	8.4					6.6	30	
	14		0.345		<0.7	<3.0	7	8.5							
	15		0.311		<0.7	<3.0	7	8.5							
	16		0.420				7	8.5							
	17		0.432				7	8.5							
	18		0.372	10	<0.7	<3.0	7	8.5							
	19		0.396		<0.7	<3.0	7	8.5							
	20		0.399		<0.7	<3.0	7	8.5							
	21		0.596		<0.7	<3.0	7	8.5							
	22		0.310		<0.7	<3.0	7	8.5							
	23		0.316				7	8.5							
	24		0.440				7	8.5							
	25		0.317	10.5	<0.7	<3.0	7	8.5							
	26		0.383		<0.7	<3.0	7	8.4							
	27		0.427		<0.7	<3.0	7	8.5							
	28		0.494		<0.7	<3.0	7	8.5							
	29		0.529		<0.7	<3.0	7	8.4							
	30		0.385				7	8.5							
	1		0.330				7	8.5							2007.xls itrate (N) added 6/1/2006
	2		0.356	9.75	0.98	<3.0	7	8.5	4.5	4.2	<0.05	0.3			
	3		0.551		1	<3.0	7	8.5							
	4		0.579		<0.7	<3.0	7	8.5							
	5		0.386		<0.7	<3.0	7	8.5							
	6		0.515		<0.7	<3.0	7	8.5							
	7		0.519				7	8.5							
	8		0.429				7	8.6							
	9		0.456	10	<0.7	<3.0	7	8.5							
	10		0.418		<0.7	<3.0	7	8.5							
	11		0.470		<0.7	<3.0	7	8.5							
	12		0.587		<0.7	<3.0	7	8.5					2498		
	13		0.439		<0.7	<3.0	7	8.5					170.4		

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
July-07	14		0.723				7	8.5							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	15		0.381				7	8.5							
	16		0.397	11	<0.7	<3.0	7	8.5							
	17		0.494		<0.7	<3.0	7	8.5							
	18		0.352		<0.7	<3.0	7	8.5							
	19		0.418		1.5	5.6	7.2	8.5							
	20		0.347		0.8	3.5	7.2	8.5						29	
	21		0.318				7	8.5							
	22		0.315				7	8.5							
	23		0.339	11.8	<0.7	<3.0	7	8.5							
	24		0.381		<0.7	<3.0	7	8.5						2360	
	25		0.463		<0.7	<3.0	7	8.5							
	26		0.447		<0.7	<3.0	7	8.5							
	27		0.595		<0.7	<3.0	7	8.5							
	28		0.383				7	8.5							
	29		0.352				7	8.5							
	30		0.441	9.5	<0.7	<3.0	7.2	8.5					6.4		
	31		0.367		<0.7	<3.0	7	8.6							
August-07	1		0.345		<0.7	<3	7	8.5							
	2		0.686		<0.7	<3	7	8.5							
	3		0.373		<0.7	<3	7.2	8.5							
	4		0.388				7	8.5							
	5		0.380				7	8.5							
	6		0.337	11	<0.7	<3	7	8.5	3.86	3.3	0.49	0.1			
	7		0.315		<0.7	<3	7	8.5							
	8		0.386		<0.7	<3	7	8.5							
	9		0.346		<0.7	<3	7	8.5							
	10		0.341		<0.7	<3	7	8.5							
	11		0.444				7	8.5							
	12		0.461				7	8.5							
	13		0.345	10.5	<0.7	<3	7	8.5							
	14		0.362		<0.7	<3	7	8.5							
	15		0.427		<0.7	<3	7	8.5							
	16		0.437		<0.7	<3	7	8.5							
	17		0.372		<0.7	<3	7	8.5							
	18		0.344				7	8.5							
	19		0.323				7	8.2							
	20		0.375	10.8	<0.7	<3	7	8.5							
	21		0.308		<0.7	<3	7	8.5							
	22		0.388		<0.7	<3	7	8.5							
	23		0.377		<0.7	<3	7	8.5							
	24		0.302		<0.7	<3	7	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	25		0.408				7	8.5					1474	2416	
	26		0.417				7	8.5							
	27		0.335	10.8	<0.7	<3	7	8.5					6.1	36	Chloride
	28		0.416		<0.7	<3	7	8.5							
	29		0.407		<0.7	<3	7	8.5							
	30		0.470		<0.7	<3	7.5	8.5							
	31		0.386		<0.7	<3	7	8.5							
	1		0.337				7.1	8.5							
	2		0.378				7	8.5							
	3		0.321		<0.7	4.08	7	8.5							
	4		0.362	11	<0.7	6.8	7.1	8.5	4.05	3.8	0.06	0.2			
	5		0.574		<0.7	3.8	7	8.5							
	6		0.730		<0.7	7.5	7.2	8.5					2324	3600	
	7		0.428		<0.7	<3.0	7	8.5							
	8		0.343				7	8.5							
	9		0.394				7	8.5							
	10		0.390	10.2	<0.7	<3.0	7	8.5							
	11		0.399		<0.7	<3.0	7	8.5					5.1	41	
	12		0.361		0.7	<3.0	7	8.5							
	13		0.305		0.9	<3.0	7	8.5							
	14		0.379		<0.7	<3.0	7	8.5							
	15		0.375				7	8.5							
	16		0.630				7.3	8.5							
	17		0.482	7.3	<0.7	7.5	7.4	8.4							
	18		0.374		<0.7	343	7	8.4							
	19		0.361		2.4	1915	7	8.5							
	20		0.351		1.6	549	7	8.5							
	21		0.366		<0.7	3.4	7.6	8.4							
	22		0.401				7.8	8.4							
	23		0.388				7	8.5							
	24		0.388	8.3	<0.7	<3.0	7	8.5							
	25		0.381		<0.7	<3.0	7.5	8.4							
	26		0.396		3.5	1043	7	8.5							
	27		0.314		<0.7	<3.0	7	8.5							
	28		0.419		0.82	5.9	7.4	8.5							
	29		0.338				7	8.7							
	30		0.364				7	8.5							
	1		0.364	7.5	1.34	375	7	8.7	3.48	3.0	0.06	0.4			
	2		1.058		0.95	7.06	7	8.5							
	3		0.347		<0.7	9.8	7	8.5							
	4		0.366		<0.7	<3.0	7	8.5							
	5		0.382		<0.7	<3.0	7	8.5							

September-07

Data from Daily GW 2007.xls
Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006

006

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
October-07	6		0.386				7.2	8.5							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2
	7		0.393				7	8.5							
	8		0.362	6.75	<0.7	<3.0	7	8.5							
	9		0.388		<0.7	<3.0	7	8.5							
	10		0.293		<0.7	<0.7	7	8.5							
	11		0.021		<0.7	<3.0	7	8.5					5.56	24	
	12		0.327		0.95	6.9	7	8.5							
	13		0.361				7	8.5							
	14		0.382				7	8.5							
	15		0.402	9.5	0.898	<3.0	7	8.5							
	16		0.403		<0.7	<3.0	7	8.5							
	17		0.354		<0.7	<3.0	7	8.5							
	18		0.415		<0.7	<3.0	7	8.5					2540	5000	
	19		0.431		1.14	<3.0	7.2	8.5							
	20		0.358				7	8.5							
	21		0.394				7	8.5							
	22		0.370	10	<0.7	<3.0	7	8.5							
	23		0.435		<0.7	<3.0	7	8.5							
	24		0.395		<0.7	<3.0	7.2	8.5							
	25		0.398		<0.7	<3.0	7	8.6							
	26		0.344		<0.7	<3.0	7.8	8.5							
	27		0.357				7.7	8.4							
	28		0.406				7.4	8.4							
	29		0.493	7	0.85	4.3	7	8.4							
	30		0.575		<0.7	<3.0	7	8.5							
	31		0.579		<0.7	<3.0	7	8.5							
ember-07	1		0.512		1.2	13.2	7	8.5							aily GW 2007.xls rite (N), Nitrate (N) added 6/1/2006
	2		0.532		<0.7	<3.0	7	8.5							
	3		0.840				7	8.5							
	4		0.621				7	8.5							
	5		0.616	8.5	<0.7	<3.0	7	8.5							
	6		0.545		<0.7	60.6	7	8.5							
	7		0.592		<0.7	<3.0	7	8.5							
	8		0.584		<0.7	<3.0	7	8.5							
	9		0.577		1.03	<3.0	7	8.5							
	10		0.346				7	8.5							
	11		1.252				7	8.5					3230	2800	
	12		0.375	11	<0.7	<3.0	7	8.5							
	13		0.665		<0.7	<3.0	7	8.5	3.55	3.2	<0.05	0.4			
	14		0.310		<0.7	<3.0	7	8.5					6.8	25	
	15		0.386		0.85	<3.0	7.6	8.5							
	16		0.344		<0.7	<3.0	7.3	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
Nov	17		0.406				7	8.5							Data from D
	18		0.722				7	8.5							
	19		0.441	12	<0.7	<3.0	7	8.5							
	20		0.326		1.4	<3.0	7	8.5							
	21		0.591		<0.7	<3.0	8	8.5							
	22		0.703		1.06	3	7.2	8.5							
	23		0.366		1.13	3.1	7	8.5							
	24		0.371				7.4	8.5							
	25		0.475				7.2	8.3							
	26		0.402	11.8	0.9	<3.0	7	8.5							Chloride, TIN, Ammonia, Nit
	27		0.386		0.9	<3.0	7	8.5							
	28		0.290		<0.7	<3.0	7	8.5							
	29		0.527		<0.7	<3.0	7	8.5							
	30		0.420		<0.7	<3.0	7	8.5							
December-07	1		0.348				7	8.5							Data from Daily GW 2007.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.335				7	8.5							
	3		0.479	10.5	0.99	<3.0	7	8.5	9.11	8.6	0.06	0.5			
	4		0.315		0.84	<3.0	7	8.5							
	5		0.324		1.14	<3.0	7	8.5							
	6		0.629		1.56	<3.0	7	8.5							
	7		0.322		0.8	<3.0	7	8.5							
	8		0.267				7	8.5							
	9		1.058				7	8.5					1870	3900	
	10		1.339	7.8	1.1	<3.0	7	8.5							
	11		0.796		<0.7	<3.0	7	8.5							
	12		0.397		1.4	<3.0	7	8.5							
	13		0.421		1	<3.0	7	8.5							
	14		0.294		1.7	<3.0	7	8.5							
	15		0.284				7	8.5							
	16		0.259				7	8.5							
	17		0.277		2.9	<3.0	7	8.5							
	18		0.330	9	1.9	<3.0	7	8.5							
	19		0.365		3.2	<3.0	7	8.5							
	20		0.383		1.6	<3.0	7	8.5							
	21		0.375		1	<3.0	7	8.5							
	22		0.291				7	8.5							
	23		0.274				7	8.5							
	24		0.293		<0.7	<3.0	7	8.5							
	25		0.285		<0.7	<3.0	7	8.5							
	26		0.325	11	<0.7	<3.0	7	8.5					8.38	33	
	27		0.301		<0.7	<3.0	7	8.5							
	28		0.260		1.2	<3.0	7	8.5							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	29		0.280				7	8.5							
	30		0.403				7	8.5							
	31		0.263	10.5	1.5	<3.0	7	8.5							
January-08	1		0.338		<0.7	<3.0	7.4	8.5							Data from Daily GW 2008.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.346		<0.7	<3.0	7	8.5	3.33	2.7	<0.05	0.6			
	3		0.333		<0.7	<3.0	7	8.5							
	4		0.360		<0.7	<3.0	7	8.5							
	5		0.352				7	8.5							
	6		0.316				7	8.5							
	7		0.490	10.3	<0.7	<3.0	7.6	8.5					6.7	25	
	8		0.320		<0.7	<3.0	7	8.5							
	9		0.370		<0.7	<3.0	7	8.2							
	10		0.262		<0.7	<3.0	7.6	8.0							
	11		0.283		<0.7	<3.0	7	8.2							
	12		0.324				7	8.4							
	13		0.368				7.6	8.0							
	14		0.365	12.5	<0.7	<3.0	7.6	8.5							
	15		0.403		<0.7	<3.0	7.2	8.2							
	16		0.340		<0.7	<3.0	7.9	8.5							
	17		0.326		<0.7	<3.0	7	8.5							
	18		0.447		0.865	3.88	7	8.5							
	19		0.288				7.5	8.4							
	20		0.354				7	8.5							
	21		0.297	13.8	0.81	<3.0	7.2	8.5							
	22		0.374		<0.7	<3.0	7	8.5							
	23		0.641		<0.7	<3.0	7	8.4							
	24		0.652		<0.7	<3.0	7	8.4							
	25		0.473		1.6	<3.0	7	8.5							
	26		0.635				7.8	8.4							
	27		0.392				7	8.4							
	28		0.346	12	<0.7	<3.0	7.9	8.2							
	29		0.344		<0.7	<3.0	7.6	8.4							
	30		0.452		<0.7	<3.0	7	8.0							
	31		0.414		<0.7	<3.0	7.4	8.5							
	1		0.477		1.2	15.2	7	8.4							
	2		0.310				7	8.5							
	3		0.494				7	8.5							
	4		0.572	9.3	0.82	22.2	7	8.5					6.1	20	
	5		0.662		<0.7	10.9	7	8.5					508	930	
	6		0.586		1.2	4.6	7	8.5							
	7		0.401		<0.7	11.2	7	8.5					296	420	
	8		0.386		0.83	13.8	7	8.3							dded 6/1/2006

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
February-08	9		0.358				7	8.5							Data from Daily GW 2008.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) a
	10		0.417				7	8.5							
	11		0.345	10	<0.7	<3.0	7	8.5							
	12		0.336		<0.7	<3.0	7	8.5							
	13		0.366		<0.7	<3.0	7	8.5							
	14		0.555		<0.7	<3.0	7.5	8.4							
	15		0.205		<0.7	<3.0	7	8.5							
	16		0.280				7	8.5							
	17		0.222				7	8.5							
	18		0.214	12.3	0.8	8.1	7.6	8.5							
	19		0.174		1.1	15.1	7	8.5	5.4	4.9	<0.05	0.5			
	20		0.397		1.3	22.3	7.4	8.5							
	21		0.363		<0.7	<3.0	7.2	8.4							
	22		0.386		<0.7	<3.0	7	8.5							
	23		0.428				7	8.5					269	2820	
	24		0.407				7	8.5							
	25		0.430	11.5	1.7	609	7	8.5							
	26		0.430		0.8	11.2	8.5	8.7							
	27		0.331		1.2	19.3	8.5	8.6							
	28		0.000		0.8	8.2									
	29		0.085		1.6	18.6	8.5	9.0							
March-08	1		0.093				8.3	8.8							Data from Daily GW 2008.xls mmonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.077				8.5	8.8							
	3		0.062	15.25	<0.7	5.1	8.3	8.9							
	4		0.000												
	5		0.000												
	6		0.000												
	7		0.000												
	8		0.000												
	9		0.000												
	10		0.203		1.2	11.9	8.8	8.8							
	11		0.483		1.7	17.9	7.6	8.6							
	12		0.328	16.3	1.8	24.7	7.1	8.1							
	13		0.361		<0.7	<3.0	7.1	8.3							
	14		0.433		1.1	11.2	7.3	8.3							
	15		0.469				7.08	8.3					3679.8	3719	
	16		0.426				7.3	8.4							
	17		0.552	12.25	<0.7	3	7.5	8.3	3.99	3.2	0.1	0.7			
	18		0.402		<0.7	<3.0	7.4	7.9							
	19		0.436		<0.7	<3.0	7.6	8.2					6980	49	
	20		0.428		<0.7	<3.0	7.5	7.9							
	21		0.401		0.8	<3.0	7.4	8.4							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	22		0.436				7.2	8.2							Chloride, TIN, A
	23		0.435				7.3	8.4							
	24		0.454	13	<0.7	<3.0	7.5	8.4							
	25		0.357		<0.7	<3.0	7.4	8.4							
	26		0.141		1.4	104	7.6	8.5							
	27		0.548		0.7	168	7.3	8.2							
	28		0.454		<0.7	10.5	7.6	8.2							
	29		0.531				7.2	8.1							
	30		0.649				7.5	8.2							
	31		0.512	8.5	<0.7	7	7.5	7.8							
April-08	1		0.439		<0.7	<3.0	7.48	8.4							Data from Daily GW 2008.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.068		<0.7	<3.0	8.24	8.2					5.6	29	
	3		0.092		<0.7	<3.0	7.88	7.9	2.78	2.3	<0.05	0.5			
	4		0.000		<0.7	<3.0									
	5		0.159				7.86	7.9							
	6		0.000												
	7		0.000	7.5	<0.7	<3.0							4.3	28	
	8		0.000		<0.7	4.6									
	9		0.152		<0.7	<3.0	7.18	7.2							
	10		0.598		<0.7	<3.0	7.17	7.9							
	11		0.481		<0.7	3.2	7.1	7.9							
	12		0.567				7.25	7.9							
	13		0.417				7.36	8.1							
	14		0.397	16	<0.7	<3.0	7.8	8.3							
	15		0.360		<0.7	<3.0	7.7	8.3							
	16		0.395		5.3	1950	7.44	8.3							
	17		0.499		6.8	2770	7.2	8.4					2296	3100	
	18		0.673		8.8	3125	7.49	8.4							
	19		0.535				7.58	8.2							
	20		0.589				7.9	8.1							
	21		0.589	19.25	1.7	245	7.6	8.1							
	22		0.587		0.75	29.6	7.85	8.2							
	23		0.427		0.8	56	7.54	8.2							
	24		0.570		1.1	77	7.41	8.1							
	25		0.994		1.2	81	7.43	8.4							
	26		1.172				7.3	8.4							
	27		1.060				7.8	8.5							
	28		1.071	9	1.8	153	7.5	8.5							
	29		1.100		0.9	67	7.22	8.4							
	30		0.960		2.2	246	7.18	8.3							
	1		1.023		<0.7	79.3	7.07	8.4							
	2		0.729		<0.7	23.5	7.1	8.4							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
May-08	3		0.803				7.03	8.4							Data from Daily GW 2008.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	4		0.527				7.4	8.4							
	5		0.444	18.25	<0.7	12	7.25	8.4	17.03	3.2	<0.05	13.8	988	9	
	6		0.541		<0.7	<3.0	7.42	8.1							
	7		0.494		<0.7	<3.0	7.11	8.3					7.938	35	
	8		0.492		<0.7	<3.0	7.6	8.2							
	9		0.484		<0.7	<3.0	7.57	8.3							
	10		0.392				7.49	8.2							
	11		0.187				8.1	8.9							
	12		0.423	12	0.9	<3.0	7.9	8.4							
	13		0.416		1.2	<3.0	7.5	8.5							
	14		0.385		1.4	<3.0	7.06	8.4							
	15		0.417		<0.7	<3.0	7.07	8.3							
	16		0.383		<0.7	<3.0	7.4	8.4							
	17		0.736				7.76	8.4							
	18		0.663				7.47	8.4							
	19		0.447	12.5	<0.7	<3.0	7.5	8.2							
	20		0.409		1	<3.0	7.11	8.3							
	21		0.434		0.8	<3.0	6.9	8.4							
	22		0.433		0.7	<3.0	7.1	8.3							
	23		0.462		<0.7	<3.0	7.2	8.4							
	24		0.457				7.1	8.4							
	25		0.441				7.18	8.4							
	26		0.517	10.5	<0.7	<3.0	7.38	8.3							
	27		0.439		<0.7	<3.0	7.33	8.3							
	28		0.208		<0.7	<3.0	7.31	8.3							
	29		0.000		<0.7	<3.0									
	30		0.266		<0.7	<3.0	8.47	8.5							
	31		0.492				7.25	8.3						2684	
	1		0.460				8.27	8.4							2008.xls Nitrate (N) added 6/1/2006
	2		0.459	11.75	<0.7	<3.0	7.3	8.3							
	3		0.520		0.7	<3.0	8.4	8.4	4.56	4.3	0.08	0.2	1830	4000	
	4		0.481		0.8	<3.0	7.3	8.3							
	5		0.476		<0.7	<3.0	7.1	8.4							
	6		0.111		<0.7	<3.0	6.85	8.0							
	7		0.335				8.17	8.8							
	8		0.442				8.16	8.7							
	9		0.840	14.5	<0.7	<3.0	7.31	8.8							
	10		0.608		<0.7	<3.0	7.5	8.3							
	11		0.525		<0.7	<3.0	7.1	8.3							
	12		0.445		<0.7	<3.0	7.84	8.2							
	13		0.454		<0.7	<3.0	7.36	8.7							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
June-08	14		0.427				7.48	8.7							Data from Daily GW Chloride, TIN, Ammonia, Nitrite (N),
	15		0.460				7.02	8.5							
	16		0.497	13	<0.7	<3.0	8.04	8.2							
	17		0.534		<0.7	<3.0	7.72	8.3							
	18		0.501		0.821	<3.0	7.6	8.3							
	19		0.525		<0.7	<3.0	7.7	8.2							
	20		0.464		0.7	<3.0	7.5	8.4					7.4	40	
	21		0.515				7.5	8.4							
	22		0.453				7.6	8.4							
	23		0.455	12	<0.7	<3.0	7.9	7.9							
	24		0.400		<0.7	<3.0	7.56	8.4							
	25		0.436		<0.7	<3.0	7.78	8.3							
	26		0.373		<0.7	<3.0	7.38	8.1							
	27		0.635		<0.7	<3.0	7.5	8.3							
	28		0.444				7.39	8.1							
	29		0.562				7.48	8.2							
	30		0.451	11	<0.7	<3.0	6.54	8.6							
July-08	1		0.563		<0.7	<3.0	7.01	8.6							Data from Daily GW 2008.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006
	2		0.531		<0.7	<3.0	7.2	8.2							
	3		0.482		<0.7	<3.0	7.22	8.2							
	4		0.473		<0.7	<3.0	7.3	8.3							
	5		0.476				7.3	8.4							
	6		0.505				7.3	8.4							
	7		0.428	11.5	<0.7	<3.0	7.52	8.9							
	8		0.500		<0.7	<3.0	7.48	8.4					6.85	41	
	9		0.500		<0.7	<3.0	7.38	8.4							
	10		0.504		1.2	4.6	7.39	8.3	6.06	6.1	<0.05	<0.10			
	11		0.450		<0.7	<3.0	7.1	8.4							
	12		0.441				7.1	8.3							
	13		0.676				7.1	8.5							
	14		0.424	11.5	<0.7	<3.0	7.08	8.4							
	15		0.489		<0.7	<3.0	7.43	8.4							
	16		0.502		<0.7	<3.0	7.64	8.4							
	17		0.502		<0.7	<3.0	7.2	8.2							
	18		0.458		<0.7	<3.0	7.17	8.1							
	19		0.433				7.15	8.0							
	20		0.437				7.24	8.1							
	21		0.478	11	<0.7	<3.0	7.07	8.3							
	22		0.415		1.7	5.9	7.12	8.4							
	23		0.455		<0.7	<3.0	7.7	8.4							
	24		0.448		<0.7	<3.0	7.6	8.4							
	25		0.494		0.95	3.9	6.96	8.2							

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
	26		0.232				7.54	7.8					1460	2500	
	27		0.727				7.6	8.2							
	28		0.386	12	<0.7	<3.0	7.24	8.4							
	29		0.434		<0.7	<3.0	7.21	8.4							
	30		0.424		<0.7	<3.0	7.21	8.4							
	31		0.468		<0.7	<3.0	7.13	8.3							Chlor
August-08	1				<0.7	<3.0									
	2														
	3														
	4				<0.7	<3.0									
	5				<0.7	5.8									
	6				<0.7	4.1									
	7				<0.7	5.6									
	8				<0.7	<3.0									
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														
	26														
	27														
	28														
	29														
	30														
	31														Data from Daily GW 2008.xls Chloride, TIN, Ammonia, Nitrite (N), Nitrate (N) added 6/1/2006

		Sample Location	EF-1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	EQ -1	Comments
		PARAMETER	Flow	Chloride	Ethanolamine	Hydrazine	pH Low	pH High	Total Inorganic Nitrogen	Ammonia	Nitrite Nitrogen	Nitrate Nitrogen	Dissolved Sodium	Sulfate	
		LIMITS	2.400				6.5	9.0							
	DAY	UNITS	MGD	mg/l	mg/l	ug/l	S.U.	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
		CNP 2008 Groundwater Permit Renewal													
		Table 1 Recent Compliance History 00D Discharge to Absorption Pond													
		No. Observations	1308	114	201	162	1296	1296	26	26	9	25	133	135	
		Minimum	0.000	4.300	0.080	3.000	6.300	7.000	0.400	0.100	0.060	0.070	2.500	9.000	
		Average	0.425	10.864	1.474	108.819	6.900	8.310	4.463	3.525	0.132	0.928	525.287	695.593	
		Maximum	1.560	21.750	15.400	3125.000	8.800	8.980	17.030	8.600	0.490	13.800	8040.000	8360.000	
		90th Percentile	0.635	13.000	2.100	167.950	7.500	8.500	6.030	5.260	0.234	0.586	1955.600	3055.200	
		95th Percentile	0.763	16.825	3.270	393.050	7.600	8.500	8.348	5.945	0.362	0.670	2652.000	3728.600	
		Censored values treated as 1/2 the MDL													
		No. Observations	1308	114	643	326	1296	1296	26	26	26	26	133	135	
		Minimum	0.00	4.30	0.08	0.35	6.30	7.00	0.40	0.10	0.03	0.05	2.50	9.00	
		Average	0.42	10.86	0.70	54.83	6.90	8.31	4.46	3.52	0.06	0.89	525.29	695.59	
		Maximum	1.56	21.75	15.40	3125.00	8.80	8.98	17.03	8.60	0.49	13.80	8040.00	8360.00	
		90th Percentile	0.63	13.00	1.46	30.15	7.50	8.50	6.03	5.26	0.10	0.58	1955.60	3055.20	
		95th Percentile	0.76	16.83	1.70	167.88	7.60	8.50	8.35	5.95	0.15	0.67	2652.00	3728.60	

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
January-05	1													4770					Data from CNP DMR 2005.xls
	2													10870					
	3													10130					
	4		2.02	8.02			44.3	0.1	43.7	0.5			2.28	19410					
	5													16120					
	6													17890					
	7													17610					
	8													13630					
	9													9810					
	10													10800					
	11		2.73	8.02			42.52	0.1	42.4	0.02			1.5	19910					
	12													16190					
	13													18500					
	14													18140					
	15													15050					
	16													9440					
	17		3.07	7.94			38.22		38.1	0.02			6.75	12310					
	18													19750					
	19													19000					
	20													16440					
	21							0.1						18590					
	22													15340					
	23													9860					
	24													10890					
	25		4.32	7.53			41.46	1.4	40	0.06			0.75	19750					
	26													16530					
	27													19640					
	28													17580					
	29													18090					
	30													5560					
	31													7730					
February-05	1		8.8	7.55			32.24	0.82	31.4	0.03			5.13	17710					Data from CNP DMR 2005.xls
	2													24880					
	3													24770					
	4													15390					
	5													16220					
	6													13650					
	7													14310					
	8		4.22	7.28			28.09	8.2	19.7	0.19			0.13	14110					
	9													13240					
	10													18700					
	11													16950					
	12													14970					
	13													9540					
	14													14260					
	15		5.78	7.6			33.42	0.34	32.9	0.18			0.88	17940					
	16													18070					
	17													20490					
	18													20050					
	19													16040					
	20													9540					
	21													10630					
	22		5.78	7.4			33.44	0.12	33.3	0.02			0.13	22000					
	23													17270					
	24													20560					
	25													18670					
	26													17550					
	27													11970					
	28													13240					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
March-05	1		6.93	7.74			33.39	1.04	31.7	0.65			0.25	17250					Data from CNP DMR 2005.xls
	2													17570					
	3													19560					
	4													18570					
	5													15500					
	6													11830					
	7													12300					
	8		9.18	7.67			33.15	2.51	29.9	0.74			0.88	18010					
	9													18720					
	10													19470					
	11													17140					
	12													14680					
	13													11650					
	14													18520					
	15		4.84	7.35			31.22	3.75	26.5	0.97			0.06	20290					
	16													16710					
	17													19260					
	18													19220					
	19													14730					
	20													13380					
	21													21290					
	22		6.32	7.51			35.41	7.6	24.6	3.21			0.13	22920					
	23													21900					
	24													21710					
	25													19270					
	26													18740					
	27													19250					
	28		7.48	7.77			43.01	1.91	37.6	3.5			0.13	23530					
	29		5.55	7.39			42.82	4.94	30.2	7.68			1	24610					
	30													23940					
	31													28580					
April-05	1													23950					Data from CNP DMR 2005.xls
	2													22870					
	3													29030					
	4		8.45	7.29			60.45	0.95	45.7	13.8			1.02	25830					
	5		10.34	7.24			50.84	5	29.8	16.04			3.25	22780					
	6													24910					
	7													26240					
	8													24640					
	9													21230					
	10													19060					
	11		9.8	7.63			68.67	0.53	61	7.14			0.01	22250					
	12		8.27	7.53			63.25	4	47.9	11.35			3.25	26770					
	13													24210					
	14													25310					
	15													26170					
	16													20940					
	17													15930					
	18		13.9	7.62			39.62	5	30.1	4.52			1.75	18460					
	19		7.91	7.54			42	1.5	39	1.5			1.5	17830					
	20													24000					
	21													22550					
	22													21640					
	23													13760					
	24													14450					
	25		7.28	7.45			21.59	0.2	21.2	0.19			1.5	17740					
	26		6.39	7.39			27.28	0.2	27	0.08			0.88	20510					
	27													20510					
	28													18330					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	29													17970					
	30													12470					
May-05	1													12050					Data from CNP DMR 2005.xls
	2													8600					
	3		5.14	7.56			23.5	0.25	23.2	0.05			0.63	17590					
	4													16410					
	5													16980					
	6													19030					
	7													14590					
	8													12250					
	9		4.25	7.78			21.02	0.1	20.9	0.02			0.5	7210					
	10		1.92	7.84			23.43	0.2	23.2	0.03			0.88	13620					
	11													19840					
	12													18350					
	13													20440					
	14													14330					
	15													10500					
	16		3.67	7.81			17.22	0.1	17.1	0.02			0.13	10560					
	17													16970					
	18													18570					
	19													19810					
	20													16100					
	21													11660					
	22													11080					
	23		5.4	7.91			12.43	0.1	12.3	0.03			1.25	12360					
	24													15220					
	25													15340					
	26													18700					
	27													18750					
	28													10120					
	29													8750					
	30													10150					
	31		5.4	7.75			12.14	0.1	12	0.04			1.25	15280					
June-05	1													16540					Data from CNP DMR 2005.xls
	2													18060					
	3													19340					
	4													13770					
	5													8380					
	6		4.11	7.9			7.82	0.2	7.6	0.02			1.88	11790					
	7													16520					
	8													16060					
	9													14140					
	10													16260					
	11													13520					
	12													10330					
	13		5.71	7.67			15.22	0.1	15.1	0.02			1.13	18010					
	14													20600					
	15													20680					
	16													24760					
	17													23010					
	18													11730					
	19													14260					
	20		4.16	7.95			9.63	0.1	9.5	0.03			2.25	14900					
	21		2.62	7.84			15.36	0.2	15	0.16			2.13	18440					
	22													20100					
	23													19830					
	24													22680					
	25													14410					
	26													12640					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	27		1.54	7.65			13.12	0.1	13	0.02			0.21	15100					
	28		0.99	7.58			19.53	0.1	19.4	0.03			0.3	20180					
	29													21620					
	30													21280					
July-05	1													20830					Data from CNP DMR 2005.xls
	2													17120					
	3													15130					
	4													18230					
	5		3.63	7.84			20.13	0.1	20	0.03			1.88	15990					
	6													22810					
	7													18560					
	8													17360					
	9													16430					
	10													13100					
	11		3.44	7.71			22.43	0.1	22.3	0.03			1	10540					
	12		2.89	7.52			35.66	0.1	35.5	0.06			1	19060					
	13													14970					
	14													16320					
	15													19660					
	16													15740					
	17													10060					
	18		2.51	7.89			6.23	0.11	6.1	0.02			1.25	12540					
	19		2.59	7.89			9.04	0.2	8.8	0.04			1.75	13940					
	20													15640					
	21													17460					
	22													15630					
	23													9790					
	24													11860					
	25		2.72	7.91			9.13	0.1	9	0.03			2	15940					
	26													17620					
	27													18420					
	28													19180					
	29													19750					
	30													13620					
	31													9550					
August-05	1		1.9	7.77			6.33	0.1	6.2	0.03			0.5	12470					Data from CNP DMR 2005.xls
	2													19470					
	3													19470					
	4													15030					
	5													20790					
	6													12950					
	7													10440					
	8		3.02	7.66			6.13	0.1	6	0.03			0.5	12400					
	9		2.73	7.57			10.98	0.13	10.8	0.05			0.13	17810					
	10													17570					
	11													17070					
	12													16920					
	13													14070					
	14													11130					
	15													10480					
	16		1.4	7.63			9.19	0.08	9.1	0.01			0.38	15590					
	17													16960					
	18													16000					
	19													15790					
	20													13470					
	21													12980					
	22		2.1	7.73			6.05	0.13	5.9	0.02			0.88	14710					
	23		1.4	7.62			12.33	0.1	12.2	0.03			0.88	14870					
	24													19880					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	25													19700					
	26													12890					
	27													14020					
	28													10980					
	29		2.7	7.64			8.43	0.31	8.1	0.02			1.25	24670					
	30													28220					
	31													18400					
	1													18550					
	2													17030					
	3													9540					
	4													12610					
	5													11090					
	6		1.37	7.82			10.39	0.06	10.3	0.03			0.88	14660					
	7													22300					
	8													17770					
	9													21260					
	10													13920					
	11													13830					
	12		2.74	7.96			8.32	0.09	8.2	0.03			0.88	13560					
	13		3.26	7.65			12.49	0.16	12.3	0.03			1	17970					
	14													18620					
	15													17760					
	16													17310					
	17													16260					
	18													14740					
	19													12300					
	20		1.13	7.61			11.22	0.1	11.1	0.02			1.25	16800					
	21													18890					
	22													18600					
	23													20520					
	24													14260					
	25													12350					
	26		2.79	7.9			5.72	0.1	5.6	0.02			0.75	16180					
	27		1.67	8.07			11.19	0.06	11.1	0.03			1.25	19200					
	28													14450					
	29													19100					
	30													19770					
	1													14480					
	2													11400					
	3													10920					
	4		0.76	7.54			10.26	0.14	10.1	0.02			0.38	19130					
	5													15710					
	6													18660					
	7													19350					
	8													14330					
	9													9460					
	10		1.8	7.68			10.7	0.08	10.6	0.02			0.13	12620					
	11		0.74	7.6			14.85	0.02	14.8	0.03			0.25	17540					
	12													17870					
	13													14580					
	14													19380					
	15													14340					
	16													13160					
	17		0.52	7.79			13.49	0.08	13.4	0.01			0.63	13360					
	18		0.42	7.77			17.61	0.07	17.5	0.04			0.88	17730					
	19													19000					
	20													17170					
	21													19090					
	22													16260					

September-05 — Data from CNP DMR 2005.xls

October-05 — Data from CNP DMR 2005.xls

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	23													11740					
	24		1.23	7.73			12.1	0.08	12	0.02			1.13	10910					
	25													17740					
	26													19220					
	27													17190					
	28													18790					
	29													14680					
	30													12770					
	31		0.86	7.78			13.91	0.08	13.8	0.03			0.63	16090					
November-05	1		0.58	7.57			16.1	0.06	16	0.04			0.13	17420					Data from CNP DMR 2005.xls
	2													24280					
	3													19660					
	4													15430					
	5													14860					
	6													11770					
	7		0.89	7.69			8.2	0.08	8.1	0.02			0.38	14380					
	8		0.75	7.63			12.15	0.9	11.2	0.05			0.5	23060					
	9													18270					
	10													24410					
	11													20970					
	12													16120					
	13													12720					
	14													13370					
	15		0.72	7.6			8.2	0.25	7.9	0.05			0.38	10370					
	16													15310					
	17													19940					
	18													21070					
	19													12890					
	20													12110					
	21													17040					
	22		0.23	7.73			20.04	0.1	19.9	0.04			1.13	16640					
	23													11480					
	24													9880					
	25													9640					
	26													9420					
	27													13100					
	28		0.65	7.66			23.42	0.08	23.3	0.04			0.01	13030					
	29													19190					
	30													14240					
December-05	1													20060					ta from CNP DMR 2005.xls
	2													19440					
	3													11430					
	4													12930					
	5													15560					
	6		2.39	7.25			27.17	2.46	24.6	0.11			0.2	17880					
	7													17840					
	8													19790					
	9													19850					
	10													10420					
	11													12410					
	12		0.96	7.61			8.28	0.15	8.1	0.03			0.25	10800					
	13		0.95	7.37			12.02	0.17	11.8	0.05			1.5	14150					
	14													17610					
	15													18600					
	16													20390					
	17													11880					
	18													11070					
	19		2.76	7.65			12.11	0.08	12	0.03			0.13	14700					
	20		2.4	7.59			15.31	0.08	15.2	0.03			0.13	11540					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	21													14030					Da
	22													17650					
	23													9970					
	24													12810					
	25													7980					
	26													8960					
	27		2.83	7.59			13.87	0.06	13.8	0.01			0.5	12960					
	28													11770					
	29													16280					
	30													10420					
	31													9690					
January-06	1													7100					
	2													6720					
	3		2.32	7.51			23.2	0.08	23.1	0.02			0.01	15250					
	4													23140					
	5													16430					
	6													22080					
	7													12790					
	8													12380					
	9		2.36	7.75			25.06	0.27	24.7	0.09			0.01	13930					
	10		2.25	7.53			23.52	0.72	22.6	0.2			0.5	18220					
	11													19720					
	12													15780					
	13													21560					
	14													8540					
	15													12690					
	16		2.57	7.6			19.21	0.08	19.1	0.03			0.38	12720					
	17		1.69	7.49			18.16	0.2	17.9	0.06			0.38	20930					
	18													19610					
	19													17000					
	20													19920					
	21													10690					
	22													12830					
	23		3.03	7.61			20.97	0.28	20.6	0.09			0.25	13910					
	24													19600					
	25													22400					
	26													19000					
	27													15450					
	28													14470					
	29													15460					
	30													15840					
	31		1.89	7.6			18.98	0.4	18.5	0.08			0.75	21120					
February-06	1													19610					
	2													22860					
	3													16270					
	4													16690					
	5													12930					
	6		2.48	7.53			14.73	0.7	14	0.03			0.38	11780					
	7		2.44	7.41			16.76	2.1	14.6	0.06			0.25	20380					
	8													15750					
	9													21520					
	10													18120					
	11													18980					
	12													13490					
	13													15650					
	14		2.24	7.65			18.15	1.4	16.7	0.05			1.38	19120					
	15													17740					
	16													17580					
	17													16270					

Data from CNP DMR 2006.xls

Data from CNP DMR 2006.xls

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	18													11190					Data fr
	19													13220					
	20													13690					
	21		2.94	7.47			17.51	0.87	16.6	0.04			1.25	21070					
	22													22190					
	23													16610					
	24													22290					
	25													16230					
	26													10290					
	27													17880					
	28		2.33	7.43			7.95	0.41	7.5	0.04			1.38	13650					
March-06	1													22180					Data from CNP DMR 2006.xls
	2													18060					
	3													21280					
	4													16070					
	5													9910					
	6		2.89	7.67			12.71	1.2	11.4	0.11			0.5	17690					
	7		1.97	7.34			16.56	3.84	12.1	0.62			0.38	17090					
	8													20950					
	9													21090					
	10													18010					
	11													17200					
	12													10580					
	13		1.57	7.64			7.1	0.35	6.7	0.05			0.63	17230					
	14		1.87	7.49			12.13	1.94	10	0.19			0.5	18480					
	15													21210					
	16													21140					
	17													18530					
	18													16380					
	19													13750					
	20													18730					
	21		2.95	7.63			21.67	7.1	14.3	0.27			2.5	19490					
	22													27880					
	23													26940					
	24													21580					
	25													27540					
	26													22330					
	27													18540					
	28		6.42	7.19			39.8	8.4	29.3	2.1			3.75	25730					
	29													28160					
	30													33180					
	31													24910					
April-06	1													24640					n CNP DMR 2006.xls
	2													25770					
	3			7.49			39.08	17.4	21.2	0.48			3.5	23440					
	4		3	7.33			49.7	14.7	34.4	0.6			2.75	27820					
	5													29110					
	6													32510					
	7													31860					
	8													27230					
	9													19800					
	10		2	7.34			36.51	8.23	27.9	0.38			1.69	24390					
	11			7.38			47.93	13.15	34.3	0.48			2	26430					
	12													30440					
	13													28110					
	14													23240					
	15													18720					
	16													26440					
	17			7.26			30.95	7.54	23.2	0.21			2.88	23070					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	18		3	7.17			47.84	1.35	46.4	0.09			2.5	21460					Data fron
	19													24700					
	20													23950					
	21													24300					
	22													21820					
	23													20530					
	24		2.3	7.37			21.06	0.01	21	0.05			1.88	16700					
	25													17350					
	26													21040					
	27													22980					
	28													17160					
	29													16990					
	30													14470					
	1													15160					
	2		2.28	7.58			15.35	0.01	15.3	0.04			0.88	21050					
	3													17030					
	4													19880					
	5													19440					
	6													10930					
	7													13200					
	8		3.56	7.68			11.94	0.01	11.9	0.03			0.38	17260					
	9													18650					
	10													22540					
	11													22340					
	12													23630					
	13													17910					
	14													12910					
May-06	15		3.12	7.5			5.84	0.01	5.8	0.03			0.13	19200					Data from CNP DMR 2006.xls
	16													20390					
	17													21060					
	18													20100					
	19													18880					
	20													17320					
	21													12000					
	22			7.6			12.84	0.01	12.8	0.03			0.75	13070					
	23		2.9	7.52			18.24	0.01	18.2	0.03			0.63	19200					
	24													16390					
	25													22770					
	26													20180					
	27													14600					
	28													10780					
	29													9580					
	30		2.24	7.69			11.05	0.01	11	0.04			0.25	16700					
	31													18990					
	1													18120		9	sat	sat	
	2										35			21370					
	3													12130					
	4													13070					
	5			7.21		5.55	17.338	0.01	17.3	0.028	32.1	119.5		17630		9	sat	sat	
	6		1.31	7.43									0.44	16860					
	7													20010					
	8													21260		9	sat	sat	
	9													17810					
	10													16220					
	11													12430					
	12					6.07						127.5		11800					
	13		1.6	7.05			22.845	0.01	22.8	0.035	32.1		0.5	18360		9	sat	sat	
e-06	14		0.79			3.73								18420					y SBR 2006.xls
	15													16200					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
Jun	16													18170		9.5	sat	sat	Data from Dail
	17													13060					
	18													12000					
	19													13990		9.5	sat	sat	
	20		2	7.17		3.25	8.758	0.14	8.6	0.018	27.9	142	0.5	20330					
	21					2.58						138		16850					
	22													20080					
	23													20070		9.5	sat	sat	
	24													11740					
	25													12690					
	26													16610					
	27		0.97	6.98		2.71	12.34	0.01	12.3	0.03	30.9	124	0.25	15890		9.5	sat	sat	
	28		0.88	7.16		4.09	23.14	0.01	23.1	0.03			1	20440					
	29													17500					
	30													18170		9.5	sat	sat	
July-06	1													13430					Data from Daily SBR 2006.xls
	2													9800					
	3			7.23		4.59					34.1	126		14380		9.5	sat	sat	
	4													14140					
	5		1.39			5.6	6.04	0.01	6	0.03	32.2		0.5	11850					
	6		0.95											15180		9.5	sat	sat	
	7													17700					
	8													13410					
	9													9180					
	10													15000		9.5	sat	sat	
	11		1.21	7.35		4.76	21.84	0.01	21.8	0.03	31.6	124	0.13	17600					
	12		0.74								32.9	123.5		21250					
	13													18960					
	14													21400		9.5	sat	sat	
	15													11940					
	16													13390					
	17					5.67					31.9	118.5		15930					
	18		0.75				15.5		15.5		29	111.5	0.75	20000		9.5	sat	sat	
	19			7.13		4.69	19.74	0.01	19.7	0.03			1.13	19330					
	20													22480					
	21													20120		9.5	sat	sat	
	22													12520					
	23													13060					
	24													16780					
	25		1.61			2.7	9.7		9.7		31.2	110	1.13	17670		9.5	sat	sat	
	26													20130					
	27		0.85	7		3.01	16.58	0.05	16.5	0.03			2	16960		9.5	sat	sat	
	28													19880					
	29													18640					
	30													20320					
	31													21470		9	sat	sat	
	1		1.48			2.99	9.1		9.1		26.6	95	1.63	22430					2006.xls
	2		0.65	7.17		2.1	19.6	0.07	19.5	0.03	29.8		1.5	20760					
	3													19180					
	4													22900		9	Sat	Sat	
	5													17410					
	6													12860					
	7													19180		9.5	Sat	Sat	
	8		0.83			3.02	6.4		6.4		26.9	105	0.63	19480					
	9		0.68	7.05		1.26	12.545	0.01	12.5	0.035			1.44	23890		9.5	Sat	Sat	
	10													24800					
	11													19390					
	12													16930					
	13													13280					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
August-06	14													10990		9.5	sat	sat	Data from Daily SBR
	15		0.94	7.23		1.54	12.827	0.01	12.8	0.017	31.9	117.5	0.75	16670					
	16		0.92			3.6					34.5	127		21340					
	17					2					36.5	125.5		17570					
	18													21110		9.5	sat	sat	
	19													14780					
	20													10950					
	21		1.54	7.34		4.7	4.17	0.01	4.16		34.7	124	0.38	16740		9.5	sat	sat	
	22		1.36	7.45		4.62	8.03	0.01	8	0.02	35.1	120	0.38	19980					
	23													18080					
	24										38.7	123		20850		9.5	sat	sat	
	25													20120					
	26													13270					
	27													15080					
	28			7.34		4.89	2.525	0.01	2.5	0.015		125.5	1.13	21010					
	29					1.54						118.5		24940		9.5	sat	sat	
	30		1.9	7.41		3.54	17.02	0.01	17	0.01	35	117.5		25680					
	31													26260		9.5	sat	sat	
September-06	1													22390					Data from Daily SBR 2006.xls
	2													19610					
	3													11210					
	4													10700					
	5													18870					
	6		2.8			0.94	16.3		16.3		32.6	115	2.38	27320					
	7			7.37		1.41	30.6	2.07	28.3	0.23	39.4	117.5	2.88	26120		9.5	sat	sat	
	8					1.57					41.2			28680					
	9													19150					
	10													20650					
	11		2	7.3		4.14	6.96	0.01	6.9	0.05	31.5	124	0.63	25980		9	sat	sat	
	12													29690					
	13													32640					
	14													29270					
	15													31270		9	sat	sat	
	16													29380					
	17													25730					
	18			7.1		1.58	32.47	10.6	21.8	0.07		123	4.13	33800					
	19		1.73	7.06		1.28	45.855	18.8	26.9	0.155	41.7		4.13	34550		9	sat	sat	
	20		1.27											41920					
	21													36260					
	22													35090		9.5	sat	sat	
	23													27820					
	24													32610					
	25													35320		8.5	sat	sat	
	26			7.08		1.46	39.895	9.2	30.5	0.195	42.5	138.5		41000					
	27		2.02			1.36	0.175			0.175				34990					
	28		2.64	7.16		0.7	56.06	16.7	39.1	0.26		141.5	3	35410					
	29													36060		8.5	sat	sat	
	30													34990					
	1													34910					xls
	2					1.42						140	2	31720					
	3		1.4	6.85		0.86	46.21	8.35	37.7	0.16	45.8		2	35810		8.5	Sat	Sat	
	4		1.91			1.31								41990					
	5													36160					
	6													36110		8.5	Sat	Sat	
	7													39290					
	8													36210					
	9													29790		9	Sat	Sat	
	10		3.58				35.4		35.4		48.1	151.9		33680					
	11		4.06	7.1		0.74	53.975	7.4	46.3	0.275		146	2.76	36400					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
October-06	12													43360		8.5	Sat	Sat	Data from Daily SBR 2006.
	13													33200					
	14													36980					
	15													31910					
	16													36140					
	17					0.91	34.9		34.9		40.4			37480					
	18		2.5			0.96						124	3.63	36500		9	Sat	Sat	
	19		2.96	6.95		1.71	50.765	8.4	42.1	0.265		131.5	3.25	41390					
	20													33790					
	21													35070					
	22													37210					
	23													31570		8	Sat	Sat	
	24		1.95			2.03	40.6		40.6		44.8	138	1	31480					
	25		2.65	6.85		2.26	49.755	1.13	48.6	0.025		141	1.5	32540					
	26													33090					
	27													29140		8	Sat	Sat	
	28													23210					
	29													24070					
	30													26370		8.5	Sat	Sat	
	31		1.96	6.71		2.6	46.2	0.16	46	0.04	52.2	160.5	1.88	25390					
November-06	1		1.82	6.9		3.02		0.01		0.04	42	157.5	1.75	24690		8.5	Sat	Sat	Data from Daily SBR 2006.xls
	2													23890					
	3													23480					
	4													23090					
	5													20180					
	6													18080		9	Sat	Sat	
	7		1.7	6.95		3.9	27.65	0.01	27.6	0.04	44	155.5	1.13	19420					
	8		1.64	7.24		4.7	0.035	0.01		0.025		153.5	0.63	17450					
	9													27630		9	Sat	Sat	
	10													25570					
	11													16230					
	12													16150					
	13			6.8		1.37	7.83	7.8		0.03		147.5	2.25	13710		9	Sat	Sat	
	14		8.95	7.28		1.05	12.63	8.2	4.4	0.03	40.2	144	1.88	19250					
	15		5.73	6.92		2.29	0.51	0.51				142.5		17390					
	16													25180					
	17													21530		8.5	Sat	Sat	
	18													17790					
	19													12760					
	20			7.09		5.49	13.54	0.01	13.5	0.03	35.6	133	0.25	13580		9.5	Sat	Sat	
	21		1.62									131.5		18600					
	22		1.15			6.16								15260		9.5	Sat	Sat	
	23													15200					
	24													9170					
	25													12140					
	26													10420					
	27			7.13		6.14	0.04	0.01		0.03		129	0.38	17310					
	28		0.69	6.99		4.34	21.43	0.01	21.4	0.02	28.3	130.5	0.5	16030		8.5	Sat	Sat	
	29		0.1			0.86								20660					
	30													10540					
	1													24070		9.5	Sat	Sat	
	2													14770					
	3													15290					
	4		1.01	7.23	7.2	6.72	19.743	0.04	19.7	0.003	29.8	133.5	0.201	10110		9.5	Sat	Sat	
	5													21770					
	6		2.12	6.88	6.9	2.19		0.01		0.009		129.5	0.294	20410		9	Sat	Sat	
	7													20920					
	8													18890					
	9													17340					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
December-06	10													14110					Data from Daily SBR 2006.xls
	11			7.13	7.1	5.79		0.01				127.5	0.13	13470					
	12		2.04	6.9	6.9	3.26	21.735	0.01	21.7	0.025	33.4	126	0.13	18580					
	13		2.05	7.02	7.0			0.47		0.03			0.25	21810		9.5	Sat	Sat	
	14													20020					
	15													21410		9.5	Sat	Sat	
	16													14360					
	17													16730					
	18													13310					
	19			7.3	7.3	1.2	12.21	0.38	11.8	0.03	30.7	123	0.5	17690					
	20													12740					
	21		0.82	7.13	7.1							125		19350		9	Sat	Sat	
	22													12280					
	23													12500					
	24													8390					
	25													10430					
	26			7.3	7.3	5.2	3.935	0.01	3.9	0.025	27.8	135.5	0.13	13950					
	27		0.83	7.36	7.4	6.5		0.01		0.02		130	0.13	13540					
	28		0.93											17060		9.5	Sat	Sat	
	29													12790					
	30													9830					
	31													7340					
January-07	1													12750					Data from Daily SBR 2007.xls
	2					6.01	12.76	5.05	7.6	0.11	30.2	123	0.125	14310					
	3													17930		9	sat	sat	
	4		5.39	7.17	7.2									21270					
	5													21760					
	6													13950					
	7													12610					
	8			6.8	6.8	1.02								13970		9.5	sat	sat	
	9		8.35	7.17	7.2	1.54	14.535	13.8	0.7	0.035	39.2	130	0.125	14950					
	10		6.02	7.2	7.2	0.9								18040					
	11													20820		9.5	sat	sat	
	12													17670					
	13													12180					
	14													12480					
	15													16510					
	16		1.71	7.24	7.2	4.95	15.84	0.01	15.8	0.03	37.3	129.5	0.13	21120					
	17		1.27	7.17	7.2	5.22		0.01		0.025		130.5	0.13	18470		9	sat	sat	
	18													18280					
	19													27190		9	sat	sat	
	20													25070					
	21													16170					
	22													21180		9	sat	sat	
	23		6.5	7.11	7.1	1.54	6.185	2.55	3.6	0.035	28.5	101	0.75	24410					
	24		5.52	7.24	7.2	1.19		0.95		0.03		100	0.75	28940					
	25													23280					
	26													20500		9	sat	sat	
	27													27120					
	28													11970					
	29													20180					
	30													18700					
	31		4.82	6.58	6.58	1.17	17.05	1.52	15.5	0.03	37	114	0.5	21780		8.5	sat	sat	
	1		3.47	6.78	6.78	5.9	0.035	0.01		0.025		120	0.125	16630					
	2													19580		9	sat	sat	
	3													12620					
	4													12660					
	5													12180					
	6		2.48	7.13	7.13	3.64	9.34	0.01	9.3	0.03	42.4	130.5	0.75	19700					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
February-07	7		3.32	7.2	7.2	4	0.04	0.01		0.03			0.63	19000					Data from Daily SBR 2007.xls
	8													23300		9	sat	sat	
	9													17160		9	sat	sat	
	10													16490					
	11													11720					
	12			7.6	7.6	5.61	6.85	0.01	6.8	0.04	44.6	128.5	0.38	19520					
	13													18140					
	14		12.34	7.3	7.3	1.35						126		21530					
	15													17500					
	16													21160		9	sat	sat	
	17													14520					
	18													16550					
	19													13030					
	20		1.86	7.04	7	2.44	3.85	0.02	3.8	0.03	42.4	126	0.13	22040					
	21		3.69	7	7	1.22	2.05	2.01		0.04		124.5	0.38	19500		8.5	sat	sat	
	22													22510					
	23													16860		9	sat	sat	
	24													15420					
	25													11320					
	26			7	7	3.81						128		17100		9	sat	sat	
	27													17250					
	28		2.18	6.88	6.9	2.01	9.88	0.04	9.8	0.04	45.9		0.13	20590					
March-07	1													18170		9	sat	sat	Data from Daily SBR 2007.xls
	2													21310					
	3													14850					
	4													15900					
	5													14470					
	6		1.22	7.18	7.2	1.47	6.33	0.5	5.8	0.03	41.1	119	0.38	19120		8.5	sat	sat	
	7		3.45	7.2	7.2	1.53				0.05		121.5	0.38	18100					
	8													22130					
	9													18630		9	sat	sat	
	10													20500					
	11													13930					
	12													17720		9	sat	sat	
	13		3.54	7.14	7.1	3.38	6.73	0.7	6	0.03	38.9	120	0.38	15580					
	14		5.36	7.04	7	1.31		3.8				119.5		23130		8.5	sat	sat	
	15													19070					
	16													22450					
	17													14660					
	18													16010					
	19													14830		9	sat	sat	
	20		0.86	6.96	7	2.21	7.725	0.7	7	0.025	43	110	0.13	20740					
	21		3.66	7.05	7.1	1.68		2.51				114		22430					
	22													22190					
	23													12790		9	sat	sat	
	24													11470					
	25													13310					
	26													13840		9.5	sat	sat	
	27		0.85	7.03	7	1.92	8.005	0.58	7.4	0.025	40	110	1.13	23130					
	28		3.62	7.07	7.1	1.37		1.77		0.035		108.5	1.44	18760					
	29													22520		9	sat	sat	
	30													17100					
	31													15650					
	1													14740					
	2													16280					
	3		2.07	7	7	3.87	5.725	0.1	5.6	0.025	38		0.13	14440					
	4		1.39	7	7	4.19				0.025		112.25	0.13	16740		8.5	Sat	Sat	
	5													15850					
	6													15920		9	Sat	Sat	

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
April-07	7													10880					Data from Daily SBR 2007.xls
	8													13680					
	9													12050		9	Sat	Sat	
	10		1.68	6.9	6.9	2.89	14.92	0.1	14.8	0.02	33.7		0.63	21420					
	11		3.87	7.17	7.2	2.03		0.01		0.09		113.5	0.88	21770					
	12													25880					
	13													21080		8.5	Sat	Sat	
	14													17940					
	15													13060					
	16													16420					
	17		2.39	6.99	7	3.23	15.375	0.83	14.5	0.045	35.2		0.13	21930		9	Sat	Sat	
	18		1.96	6.97	7	3.6		0.01		0.025		110.3	0.13	22450					
	19													22570		9	Sat	Sat	
	20													18160					
	21													16050					
	22													14650					
	23													17780		9.5	Sat	Sat	
	24		6.75	7.1	7.1	1.38	8.835	5.9	2.9	0.035	36.4	111	0.75	17660					
	25		7.15	6.96	7	1.44		3.28		0.04		111.5	0.5	24010					
	26													19350					
	27													25230		9	Sat	Sat	
	28													14270					
	29													14910					
	30													16340					
May-07	1		4.71	6.95	6.95	1.41	6.47	1.14	5.3	0.03	40.2	121.5	0.75	22490		9	sat	sat	Data from Daily SBR 2007.xls
	2		4.32	7.02	7.02	1.48		1.88		0.025			1	19540					
	3													20790		9.5	sat	sat	
	4													21330					
	5													18060					
	6													13860					
	7													22950		9	sat	sat	
	8		3.09	6.96	6.96	1.7	5.36	0.63	4.7	0.03	32.2	102.5	0.38	21110					
	9		1.67	7.05	7.1	1.1		0.88		0.025			0.38	25710					
	10													23110		9	sat	sat	
	11													26680					
	12													17840					
	13													19120					
	14													14080					
	15													25030					
	16		2.95	6.76	6.8	1.66	8.645	3.33	5.3	0.015	38.7	106.5	0.125	19470					
	17													24350		8.5	sat	sat	
	18													18920					
	19													19080					
	20													11370					
	21													19110					
	22			7.24	7.2	3.46	7.337	0.01	7.3	0.027	33.8	105	1.19	17920		8.5	sat	sat	
	23													20830					
	24													20450					
	25		1.52	7.17	7.2	5.51	0.01	0.01						21430					
	26													13670					
	27													12400					
	28													10660					
	29			7.35	7.4	4.29	2.34	0.01	2.3	0.03	33.7	122.5		16870					
	30											120.5	0.38	17020		9	sat	sat	
	31		0.12										0.75	20940					
	1													19240					
	2													17620					
	3													10830					
	4													15370					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARAMETER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
June-07	5		3.31	7.3	7.3	2.32	3.19	0.65	2.5	0.04	32.9	109	0.88	22950		9	sat	sat	Data from Daily SBR 2007.xls
	6		2.64	7.35	7.4	2.17		1.01		0.03		107	0.63	21920					
	7													24400					
	8													18760					
	9													16620					
	10													12850					
	11													15490		9	sat	sat	
	12			7.27	7.3	2.77	8.138	0.11	8	0.028	34.7	106		17750					
	13													17680					
	14		0.25	7.19	7.2	4.91						118	1.94	19990		9	sat	sat	
	15													18570					
	16													14710					
	17													10870					
	18													18880					
	19								7		33.5			18040		9	sat	sat	
	20													22660					
	21													22790					
	22		1.74	7.12	7.1	3.57	0.05	0.01		0.04		105	2.63	18820		9	sat	sat	
	23													14580					
	24													13170					
	25					4.54						113.5		16220					
	26		2.23	7.09	7.1	1.21	6.64	0.72	5.8	0.12	34		0.38	18780		9	sat	sat	
	27		1.61	7.1	7.1	2.28		0.01		0.025			0.88	17090					
	28													21940		8.5	sat	sat	
	29													20380					
	30													16930					
July-07	1													9970					Data from Daily SBR 2007.xls
	2			7.05	7.05	3.15			0.5		36.2	124.2	0.75	14990					
	3			7.17	7.17	3.3	3.35	0.01	3.31	0.03			0.13	16010		9.5	sat	sat	
	4													15680					
	5		0.3	7.35	7.4	5.3						122		14530					
	6													17160		9	sat	sat	
	7													14220					
	8													9640					
	9													17290					
	10		1.84	7.41	7.4	3.73	7.245	0.01	7.2	0.035	27.7	114	1.13	20300		9	sat	sat	
	11		3.01	7.39	7.4	2.53	7.62	0.01	7.58	0.03		107	1.63	21650					
	12													19680		9	sat	sat	
	13													18640					
	14													13620					
	15													11980					
	16													15250					
	17		3.07	7.45	7.5	0.98	3.38	2.15	1.2	0.03	36	114.5	0.25	19280					
	18		1.79	7.26	7.3	2.86	5.065	0.01	5.03	0.025		117	0.25	14380					
	19													21570		8.5	sat	Unsat	
	20													19510		8	sat	Unsat	
	21													16640					
	22													10330					
	23													19260		8.5	sat	Unsat	
	24		2.08	7.5	7.5	2.67	4.447	0.015	4.4	0.032	32.2		0.75	16230					
	25		0.92	7.39	7.4	2.53	7.405	0.01	7.36	0.035		107.75	0.75	22080		8.5	sat	sat	
	26													18800					
	27													22380					
	28													14460					
	29													20900					
	30													16680		8.5	sat	sat	
	31		4.14	7.15	7.15	0.99	4.765	0.94	3.8	0.025	30.8	102.5	0.13	21270					
	1		1.72	7.23	7.23	2.53	6.645	0.01	6.6	0.035		104	0.13	15880					
	2													19320					

Month, Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
August-07	3													16590		8.5	Sat	Sat	Data from Daily SBR 2007.xls
	4													14780					
	5													10750					
	6													12840					
	7			7.36	7.4	1.55	4.375	0.21	4.1	0.065	32.8	112	0.5	15264		8.5	sat	sat	
	8													25696					
	9		8.05	7.45	7.5	0.98	14.71	13.6	1.08	0.03			1.5	25940					
	10													31210					
	11													21520					
	12													13210					
	13													13630		9	sat	sat	
	14		1.5	7.4	7.4	2.76	7.51	0.26	7.2	0.03	33.2	109	2.5	20090					
	15		0.59	7.31	7.3	3.5	12.265	0.01	12.2	0.055		107.5	3.13	22640		9	sat	sat	
	16													23730					
	17													17970					
	18													14460					
	19													8480					
	20													13910					
	21			7.3	7.3	3.21	6.44	0.01	6.4	0.03	37.9	135.25	0.88	20100		9	sat	sat	
	22													22290					
	23		1.06	7.25	7.25	2.79	10.35	0.01	10.3	0.04			2.25	17680					
	24													19900		9	sat	sat	
	25													17830					
	26													13670					
	27													22300		9	sat	sat	
	28													25010					
	29		1.17	7.2	7.2	2.52	14.14	0.01	14.1	0.03	41.1	128	1	21700					
	30		0.55	7.28	7.3	2.88	21.855	0.01	21.8	0.045		127	1.25	22750					
	31													20260		9	sat	sat	
September-07	1													17880					Data from Daily SBR 2007.xls
	2													18150					
	3													13980			sat	sat	
	4		0.85	7.34	7.3	4.34	5.84	0.01	5.8	0.03	31		0.13	23200		9			
	5		4.47	7.35	7.4	1.12	19.905	9.36	10.5	0.045		121.25	0.5	29630					
	6													29170					
	7													32730		9	sat	sat	
	8													17800					
	9													11930					
	10													19420					
	11		3.97	7.18	7.2	1.28	16.66	8.74	7.9	0.02	42.6	145.5	<0.10	27100		9	sat	sat	
	12		2.92	7.01	7.01	1.05	18.99	5.42	13.5	0.07		144	0.63	25650					
	13													30650		9	sat	sat	
	14													31350					
	15													23410					
	16													22150					
	17													19940					
	18		2.55	7.08	7.1	1.2	27.53	12.1	15.4	0.03	50	141.75	3.5	32410		9	sat	sat	
	19		2.33	7.02	7	0.91	35.075	6.73	28.3	0.045		134	5.13	32190					
	20													31560					
	21													28840					
	22													20590					
	23													20850					
	24													30190					
	25		3.47	7.25	7.3	0.93	33.685	6.16	27.5	0.025	56.4	154.75	2.5	32720					
	26													31380					
	27		3.81	7.18	7.2	1.23							6.13	25360		9	sat	sat	
	28													32320					
	29													29620					
	30													26400					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
October-07	1													32560					Data from Daily SBR 2007.xls
	2		15.04	7.18	7.18	1.22	36.72	27.9	8.76	0.06	54.4		1.25	25270					
	3		6.38	7.42	7.42	0.86	32.3	15.9	16.3	0.1		142	1.63	32700		9	Sat	Sat	
	4													33790					
	5													26830					
	6													29760					
	7													26260					
	8					2.12					49.1			26060					
	9													30010					
	10													31050					
	11													29660					
	12		5.33	7.15	7.2	3.91	46.675	0.01	46.6	0.065		143.5	6.32	32240		9	Sat	Sat	
	13													29380					
	14													23650					
	15													28160					
	16													27940		8.5	Sat	Sat	
	17		2.8	7.07	7.1	3.16	37.043	0.02	37	0.023	50.4	134	6.75	33570					
	18		1.8	7.11	7.1	3.15	40.825	0.01	40.8	0.015			4.75	31710					
	19													22730					
	20													22080					
	21													25840					
	22													26040		9	Sat	Sat	
	23		7.91	7.2	7.2	1.61	18.42	8.56	9.84	0.02	46.5		2.75	25630					
	24		4.45	7.12	7.1	1.74	24.005	0.37	23.6	0.035		144.25	2.38	22260					
	25													29980					
	26													25530		9	Sat	Sat	
	27													27070					
	28													20810					
	29													23260		9	Sat	Sat	
	30													26180					
	31		2.39	7.17	7.17	3.76	25.885	0.01	25.8	0.075	44.2	144	1.38	27180					
November-07	1													21540		9	sat	sat	Data from Daily SBR 2007.xls
	2													22490					
	3													15310					
	4													16440					
	5													15250					
	6													19550					
	7		4.08	7.25	7.25	5.68	28.925	0.01	28.9	0.015	43	152.9	0.5	17730		9	sat	sat	
	8													16170					
	9													15880					
	10													14120					
	11													9120					
	12													18400					
	13													18300		9	sat	sat	
	14													18100					
	15		3.24	7.38	7.38	2.71	14.04	0.01	13.9	0.13	40.8	147.9	0.38	18100					
	16													17100		9	sat	sat	
	17													8600					
	18													8300					
	19													16800					
	20		4.3	7.12	7.12	2.78	17.51	0.01	17.3	0.2	37.6	136.9	0.13	16700					
	21													14040		9	sat	sat	
	22													8930					
	23													6670					
	24													8270					
	25													8040					
	26													15020					
	27													19240					
	28		5.33	7.52	7.52	3.03	29.435	0.01	29.4	0.025	40.2	145	0.56	15490		9	sat	sat	

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	29													19980					
	30													15810		9	sat	sat	
December-07	1													13890					Data from Daily SBR 2007.xls
	2													9080					
	3													15630					
	4													16520		9	sat	sat	
	5													14950					
	6													18910					
	7		3.78	7.2	7.2	3	24.515	0.9	23.6	0.015	43.4	132	1.63	16380					
	8													14660					
	9													9970					
	10													14720		9	sat	sat	
	11		6.74	7.27	7.27	2.51	10.325	2.1	8.21	0.015	49		0.88	13150					
	12		7.92	7.25	7.25	2.76	10.409	0.874	9.5	0.035		149.5	0.69	18080					
	13													16660					
	14													17350					
	15													13020					
	16													9520					
	17													15080					
	18		12.09	7.23	7.23	2.9	5.375	1.73	3.62	0.025	42.4	136.5	1.07	12710		9	sat	sat	
	19													16440					
	20													13060					
	21													16380					
	22													11050					
	23													8950					
	24													14350		9	sat	sat	
	25													8720					
	26		1.34	7.48	7.5	8.25	7.24	0.05	7.17	0.02	38.6	146.5	0.13	14870					
	27													14480		9	sat	sat	
	28													14250					
	29													11260					
	30													7200					
	31													12530					
January-08	1													10520					Data from Daily SBR 2008.xls
	2		0.36	7.32	7.32	8.32					31.3	141	0.13	14660					
	3		4.63	7.19	7.19	4.99	36.977	1.16	35.8	0.017		139	0.13	16650					
	4													13650		9	sat	sat	
	5													11560					
	6													7230					
	7													14580					
	8		0.93	7.15	7.15	5.29	39.235	0.02	39.2	0.015	39	144.5	0.13	16300					
	9		4.04	7.38	7.38	3.13	37.58	3.95	33.6	0.03		147.5	0.13	22740		9	sat	sat	
	10													16320		9	sat	sat	
	11													18270					
	12													8930					
	13													9080					
	14													15730					
	15		2.15	7.16	7.16	2.64	14.1	3.69	10.4	0.01	40.5	134	0.13	14890		8.5	sat	sat	
	16		4.77	7.23	7.23	2.73	18.325	8.01	10.3	0.015			0.25	16800					
	17													13250					
	18													17730					
	19													10250					
	20													8870					
	21													13400		9	sat	sat	
	22													13520					
	23		0.91			2.03					43.5		0.88	19350					
	24		3.62	7.28	7.28	2.15	17.02	6.4	10.6	0.02		154	0.88	14930					
	25													17690		9	sat	sat	
	26													10070					

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	27													9580					
	28													14660					
	29		2.42	7.48	7.48	4.17	17.52	0.7	16.8	0.02	51.8	161.4	0.13	16440		8.5	sat	sat	
	30													18490					
	31		3.94	7.05	7.05	3.48	25.36	2.64	22.7	0.02			0.38	14440					
	1						0							16380					
	2						0							10580					
	3						0							12000					
	4						0							14120					
	5		3.22	7.2	7.2	2.91	25.775	2.55	23.2	0.025	50.7	154.5	0.75	18330		9	sat	sat	
	6		4.51	7.14	7.14	1.17	27.895	4.57	23.3	0.025		149.5	1.25	14840					
	7						0							17990					
	8						0							17730		9	sat	sat	
	9						0							11900					
	10						0							11090					
	11						0							12130					
	12		4	7.25	7.25	1.4	12.875	0.75	12.1	0.025	49.2		0.81	18340		9	sat	sat	
	13		3.43	7.15	7.15	4.39	0					145.5		14670					
	14						0							19770					
	15						0							14470					
	16						0							14400					
	17						0							9030					
	18						0							14190					
	19		3.86	7.06	7.06	1.57	13.89	0.17	13.7	0.02	47.7	145	0.75	14600					
	20		2.97	7.02	7.02	3.99	28.125	0.01	28.1	0.015			0.75	16060		9	sat	sat	
	21						0							17820					
	22						0							15680					
	23						0							17270					
	24						0							14690					
	25						0							12280		9	sat	sat	
	26		3.62	7.05	7.1	2.25	23.545	0.13	23.4	0.015	51	140	2	20500					
	27		6.16	7.1	7.1	0.93	27.195	1.07	26.1	0.025			2.88	20510					
	28						0							18330					
	29						0							22920					
	1													13920					
	2													14260					
	3													7220					
	4													17520		8.5	Sat	Sat	
	5		3.57	7.31	7.31	3.1	15.338	0.415	14.9	0.023	40.7	130	1	27310					
	6													24200					
	7													18150					
	8													17540					
	9													13940					
	10													17130		9	sat	sat	
	11		4.09			1.35						131	0.13	28320					
	12		10.95	7.25	7.3	1.05	23.84	4.4	19.4	0.04	41.6	127.5	0.13	28330					
	13													24820					
	14													22800		9	sat	sat	
	15													16870					
	16													14920					
	17													14230					
	18													28960					
	19		8.93	7.27	7.3	2.06	32.867	5.02	27.8	0.047	45.2	129.5	1.25	25390					
	20		4.14	7.09	7.1	3.52	43.265	0.74	42.5	0.025		133	1.88	29230		8.5	sat	sat	
	21													22570					
	22													13140					
	23													16510					
	24													23730					
	25													29260					

February-08: Data from Daily SBR 2008.xls

March-08: Data from Daily SBR 2008.xls

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	26		8.33	7.23	7.2	0.92	47.75	12.1	35.6	0.05	47	136.5	1.88	26280		9	sat	sat	
	27													28940					
	28													25880					
	29													27500					
	30													23040					
	31													35970					
	1													37140					
	2		6.63	7.31	7.31	1.48	50.593	19.1	31.2	0.293	48.1	128	1.2	38720		9	Sat	Sat	
	3													30270					
	4													29680		8.5	Sat	Sat	
	5													28850					
	6													24210					
	7													30070					
	8		14.55	7.07	7.1	1.74	57.93	47.7	10.2	0.03	53.8	140	2.63	33390					
	9		14.6	6.96	7	1.04	65.725	31.8	33.9	0.025		136.5	4	24510		9	Sat	Sat	
	10													29900					
	11													29990		8.5	Sat	Sat	
	12													26360					
	13													30100					
	14													25760					
	15													28350		9	Sat	Sat	
	16		3.02	6.71	6.7	2.52	60.82	0.2	60.6	0.02	53.9	141.5	5.5	29420					
	17		2.52	6.87	6.9	2.62	55.92	0.1	55.8	0.02		143	5	32370					
	18													30650		9	Sat	Sat	
	19													22480					
	20													24710					
	21													30040					
	22		1.58	7.06	7.1	3.21	33.425	0.01	33.4	0.015	42.4		2.38	24480		8.5	Sat	Sat	
	23		2.14	7.1	7.1	3.39	30.53	0.01	30.5	0.02		144.5	3.5	23550					
	24													24770					
	25													20680		9	Sat	Sat	
	26													22930					
	27													17280					
	28													17750					
	29		3.05	7.22	7.2	4.06	15.93	0.01	15.9	0.02	42	141.25	1.75	17220		9	Sat	Sat	
	30		4.05	7.27	7.3	3.41	13.915	0.08	13.8	0.035			3.13	19370					
	1													21990					
	2													23210					
	3													13730					
	4													12940					
	5													15760					
	6		2.25	7.32	7.3	4.51	6.455	0.01	6.42	0.025	39.6	135.5	1.38	16920		9	sat	sat	
	7		3.89	7.41	7.4	4	11.62	0.01	11.6	0.01		134.5	1.88	22160					
	8													19780					
	9													22820		9	sat	sat	
	10													15440					
	11													15430					
	12													7930					
	13			7.26	7.3	4.5	12.53	0.01	12.5	0.02	39.1	132	1.25	18550					
	14													19670					
	15													24910		9	sat	sat	
	16		1.98	7.25	7.3	4.68								18740		9	sat	sat	
	17													20370					
	18													10550					
	19													18670		8.5	sat	sat	
	20			7.25	7.3	1.96	16.938	1.11	15.8	0.028	38.1		0.63	19250					
	21													20590					
	22		2.07	7.15	7.2	4.905	20.045	0.02	20	0.025		125.5	1.38	14640		9	sat	sat	
	23													18450					

April-08: Data from Daily SBR 2008.xls

May-08: Data from Daily SBR 2008.xls

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	24													14850					
	25													16800					
	26													11590					
	27													19230					
	28		1.97	7.47	7.5	4.16	18.33	0.01	18.3	0.02	28.9	119.5	0.5	19300					
	29		1.78	7.39	7.4	3.74	23.235	0.01	23.2	0.025		119.25	1.13	24600		8.5	sat	sat	
	30													18430					
	31													17790					
	1													11430					
	2													18270		9	sat	sat	
	3		1.59	7.33	7.33	1.53	9.385	0.15	9.2	0.035	34.1	115	0.05	17780					
	4		5.02	7.03	7.03	1.01	14.805	2.19	12.6	0.015			1.25	21410					
	5													18440					
	6													21360		8.5	sat	sat	
	7													11950					
	8													17290					
	9													17640		9	sat	sat	
	10		1.6	7.38	7.4	1.1	11.975	1.95	10	0.025	35.5	123	1.63	24790					
	11		1.26	7.33	7.33	3.09	18.11	0.085	18	0.025			0.88	19110					
	12													20630		9	sat	sat	
	13													20220					
	14													21370					
	15													17510					
	16													26330		9	sat	sat	
	17													26280					
	18													23180		8.5	sat	sat	
	19		2.97	7.43	7.4	2.32	19.583	0.35	19.2	0.033	33.3	108	6	25270					
	20													19190					
	21													20400					
	22													14670					
	23													19500		9	sat	sat	
	24		1.14	7.46	7.5	4.69	9.09	0.01	9.05	0.03	29.5	111	0.88	22100					
	25		2.1	7.28	7.3	2.93	17.495	0.18	17.3	0.015			1.75	22650					
	26													24500		9	sat	sat	
	27													17710					
	28													18250					
	29													11780					
	30													16520					
	1		1.9	7.29	7.29	2.2	8.495	0.18	8.3	0.015	34.2	120	1.38	16100		9	sat	sat	
	2													16880					
	3													16040					
	4													14230					
	5													13760					
	6													9370					
	7													20670					
	8		0.9	7.54	7.5	5.8	12.44	0.01	12.4	0.03	30	126	1.25	14730		9	sat	sat	
	9		1.46	7.32	7.3	3.64	18.335	0.01	18.3	0.025			1.38	20980					
	10													19160		8.5	sat	sat	
	11													22830					
	12													13260					
	13													15630					
	14													14360		9	sat	sat	
	15		1.91	7.34	7.34	2.57	16.545	0.01	16.5	0.035	34.2	119.5	1.63	21590					
	16		1.9	7.39	7.4	3.74	20.03	0.01	20	0.02		120.5	1.38	16220					
	17													20570		8.5	sat	sat	
	18													17870					
	19													19120					
	20													13640					
	21													16010		8.5	sat	sat	

June-08: Data from Daily SBR 2008.xls

July-08: Data from Daily SBR 2008.xls

Month - Year		Sample Location	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2	EQ-2			EQ-2	EQ-2	EQ-2	Comments
		PARA METER	BOD5	pH	pH	Dissolved Oxygen	Total Inorganic Nitrogen	Ammonia	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Sodium	Chloride	Phosphorus	Flow (Meas)	Flow (Calc)	Freeboard	Vegetation	Dike Insp	
		LIMITS		Min	Max									60000	21900000				
	DAY	UNITS	mg/l	6.5	9.0	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	GPD	GPY	Feet	Sat/Unsat	Sat/Unsat	
	22		2.15	7.34	7.3	3.01	8.928	0.01	8.9	0.018	31.5	116	1	18100					
	23		2.5	7.39	7.4	3.38	12.24	0.01	12.2	0.03		117	1.25	21080					
	24													21240		8.5	sat	sat	
	25													23820					
	26													15420					
	27													14060					
	28													16940		9	sat	sat	
	29		2.13	7.2	7.2	3.09	7.835	0.01	7.8	0.025	29.8	110	0.63	27260					
	30		3.6	7.27	7.3	2.8	13.425	0.3	13.1	0.025		105.25	1.75	22330					
	31													24820					
August-08	1													19300					Data from Daily SBR 2008.xls
	2													18000					
	3													11040					
	4													19440					
	5													17700					
	6		1.94	7.01	7	2.47	18.26	0.035	18.2	0.025			0.88	21580					
	7		1.32	7.15	7.2	3.96	24.53	0.01	24.5	0.02			1.3	17390					
	8						0							21220					
	9						0							11680					
	10						0							14170					
	11						0							12140					
	12																		
	13																		
	14																		
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	31																		

No. Observations	293	299	159	217	302	284	268	281	125	170	293	1319
Minimum	0.1	6.58	6.58	0.7	0	0.01	0.5	0.003	26.6	95	0.01	4770
Average	3.2	7.3	7.2	2.9	18.1	2.1	17.9	0.3	38.2	127.3	1.2	18605.8
Maximum	15.04	8.07	7.6	8.32	68.67	47.7	61	16.04	56.4	161.4	6.75	43360
90th Percentile	6.4	7.7	7.4	5.1	39.9	7.5	35.4	0.2	48.6	145.6	2.7	26290.0
95th Percentile	8.3	7.8	7.5	5.7	47.8	10.4	41.6	0.6	50.9	152.5	3.6	30287.0